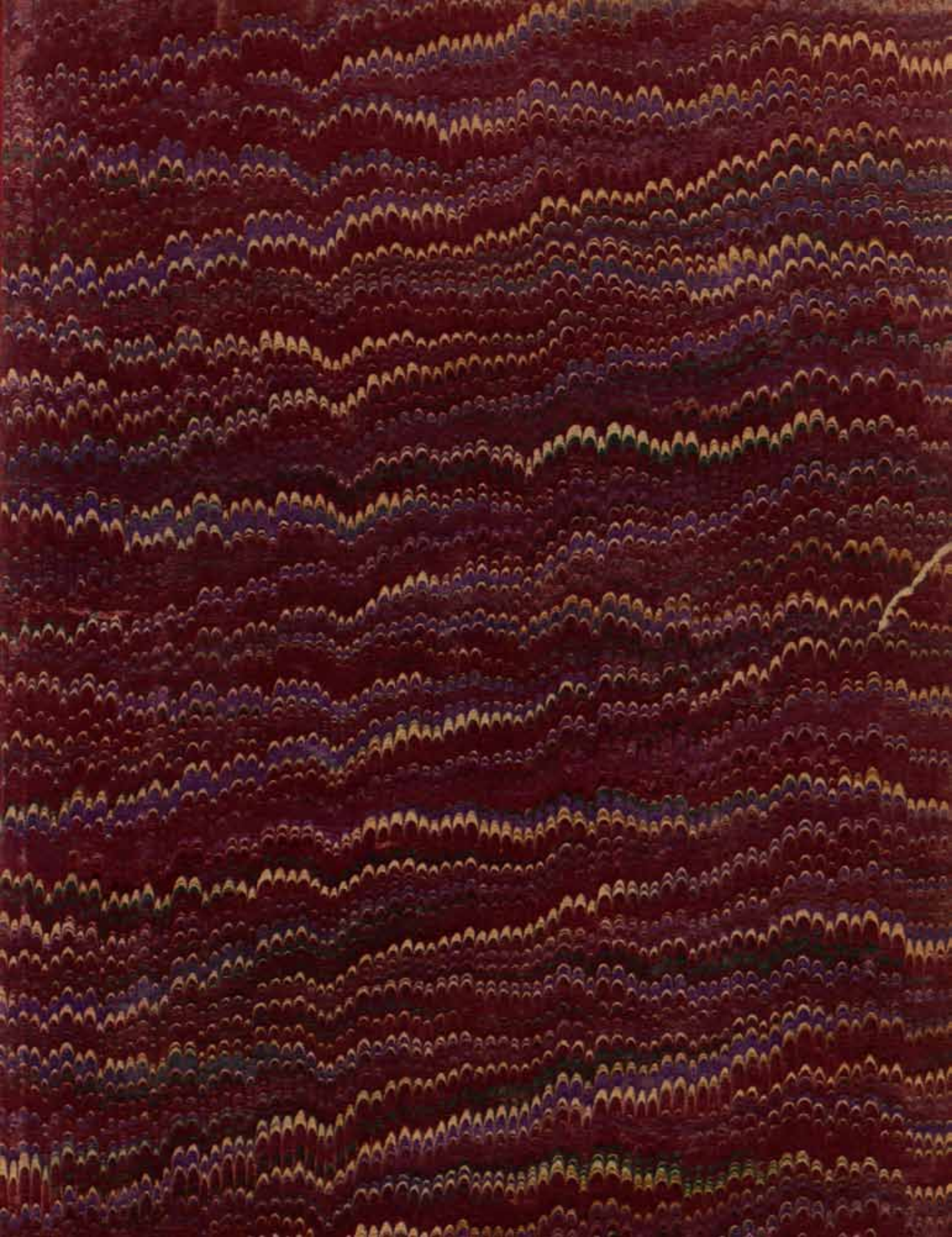
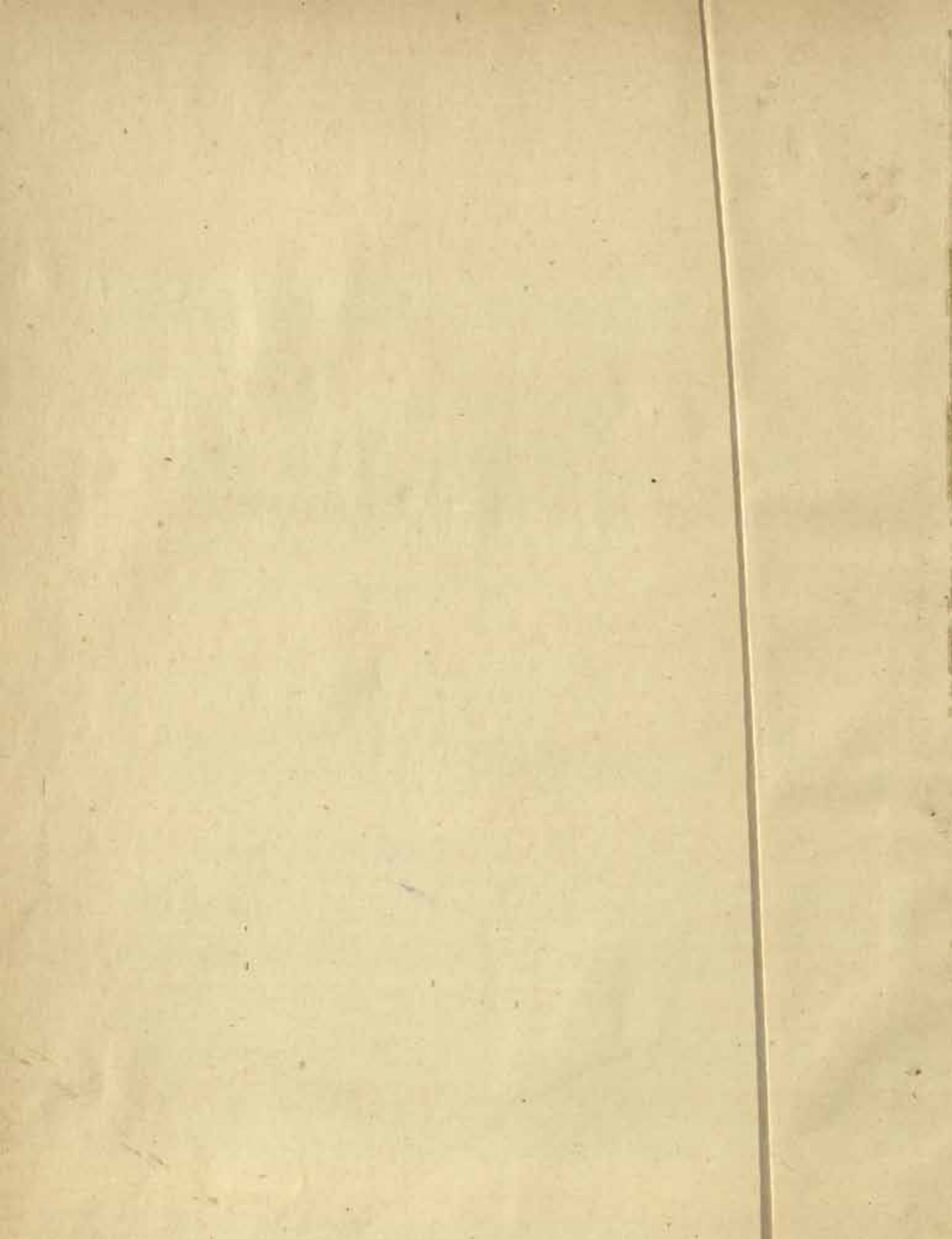


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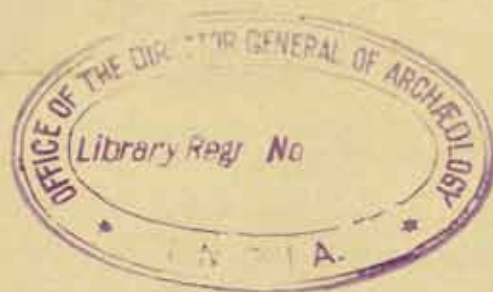
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WIENER (ALFRED)—Das Warenhaus, Kauf-, Geschäfts-, Büro-Haus. So. Berlin 1912

TOTAL:—74 VOLUMES, 8 PAMPHLETS.

MAPS—PURCHASED.

LONDON TOPOGRAPHICAL SOCIETY—[Reproduction of] a prospect and map of London, showing the River Thames to Woolwich Reach; drawn by Jonas Moore in 1662. P. Lond. 1912

TOTAL:—MAPS, 1.

THE LOAN LIBRARY.

PRESENTED.

BRITISH SCHOOL AT ATHENS—Annual, no. xvii. Session 1910-11. So. Lond. [1912]

CASELL & CO., LTD., the Publishers—BLOMFELD (REGINALD)—Architectural drawing and draughtsmen. So. Lond. 1912

"COUNTRY LIFE," LTD., the Publishers—TIPPING (H. AVRAY), Editor—English homes of the early renaissance. Elizabethan and Jacobean houses and gardens. fo. Lond. [1912]

LAWRENCE WEAVER Hon. Assoc.—SUTCLIFFE (G. LISTER)—The modern plumber and sanitary engineer, &c., vol. i. So. Lond. 1907

REILLY (C. H.) Fellow—Liverpool architectural sketch-book. Ed. by C. H. Reilly. fo. Lond. 1911

TOTAL:—VOLUMES, 5.

PURCHASED.

ADDY (SIDNEY OLDALL)—Church and manor. A study in English economic history. So. Lond. 1913

ANDERSON (WILLIAM J.)—The architecture of the renaissance in Italy, &c. 4th ed. So. Lond. 1909

BILDER AUS ITALIEN—Landschaft, Baukunst, Leben. So. Leipzig [1912]

BOARD OF AGRICULTURE AND FISHERIES—Report of the departmental committee . . . [on] buildings for small holdings, &c. fo. Lond. 1913

BROQUELET (A.)—Nos cathédrales. So. Paris [1912]

CAIN (GEORGES)—Nouvelles promenades dans Paris. So. Paris n.d.

COLEMAN (T. E.)—Estimating for reinforced concrete work, &c. So. Lond. [1912]

CRACE (JOHN D.)—The art of colour decoration: being an explanation of the purposes to be kept in view and the means of attaining them. fo. Lond. [1912]

CUBITT (HORACE)—Building in London: a treatise on the law and practice affecting the erection and maintenance of buildings in the metropolis; with . . . the cost of building work . . . by H. J. Leaning, and the valuation, development and rating of London property, by S. A. Smith. So. Lond. 1911

CURTIS (C. E.)—Valuation of land and houses, with valuation examples by D. T. Davies, and indication, &c., by I. Curtis. 4th ed. . . . by S. A. Smith. So. Lond. 1912

DEUTSCHEN WERKBUNDES—Die Kunst in Industrie und Handel. Jahrbuch des deutschen Werkbundes 1913. So. Jena 1913

FLETCHER (BANISTER)—Arbitrations. So. Lond. 1904

Dilapidations. So. Lond. 1906

London Building Acts, 1905-08. So. Lond. 1908

HAYDEN (ARTHUR)—Chats on cottage and farmhouse furniture; with a chapter on old English chintzes by Hugh Phillips. So. Lond. 1912

JEKYLL (GERTRUDE) and WEAVER (LAWRENCE)—Gardens for small country houses. 40. Lond. [1912]

JOHNSTON (EDWARD)—Manuscript and inscription letters, &c. fo. Lond. 1911

JONES (BERNARD E.) and LAKEMAN (ALBERT) Editors—Cassell's reinforced concrete. A complete treatise on the practice and theory of modern construction in concrete-steel. 40. Lond. 1913

LIVERPOOL—UNIVERSITY OF LIVERPOOL—School of Architecture—The Liverpool architectural sketch-book . . . Ed. by C. H. Reilly. 1913. fo. Lond. 1913

MARKHAM (JOHN H.) and others—Building construction, vol. ii. [The Architects' Library.] So. Lond. 1913

McGOODWIN (H.)—Architectural shades and shadows. 40. Boston 1904

MIDDLETON (G. A. T.)—Building materials, their nature, properties and manufacture, &c. So. Lond. 1905

PINDER (WILHELM)—Deutscher Barock: die grossen Baumeister des 18. Jahrhunderts. So. Leipzig [1912]

PITE (BERESFORD), BAGGALLAY (FRANK) and others—Building construction, vol. i. So. Lond. 1910

SIMPSON (F. M.)—A history of architectural development, vol. ii. Medieval. So. Lond. 1913

—, vol. iii. The renaissance in Italy, France, and England. So. Lond. 1913

STATHAM (H. HEATHCOTE)—A short critical history of architecture. So. Lond. [1912]

TRIGGS (H. INIGO)—Garden craft in Europe. So. Lond. [1913]

WALDRAM (PERCY J.)—The principles of structural mechanics, treated without the use of higher mathematics. So. Lond. [1912]

TOTAL:—VOLUMES, 28.

THE ARTHUR CATES COLLECTION OF PHOTOGRAPHS.

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PART II.

ITALY (ii.).

- MURANO**—Cathedral: detail of façade (before the restoration).
SALERNO—General view of the town.
 Cathedral: detail view of pulpita.
 Pulpit in church of Benedictine abbey of La Trinità della Cava.
SIENA—General views of the town. 3 sheets.
 Cathedral: Views from the S.W. and N.W. 2 sheets;
 Detail view of a doorway; Original design for the west front, reproduced from the original drawing.
 Baptistry: View of façade; View of interior.
 Cathedral: interior, view of nave; View from the aisles;
 Model of the entire pavement; The choir stalls; The Pulpit; Doorway to library; The library.
 Palazzo Pubblico: exterior; Detail of entrance porch.
TIVOLI—Temple of Vesta.
 Views of the town and various waterfalls. 4 sheets.
TURIN—Church of the Superga: view of exterior from the S.W.
 Palazzo Madama: view of exterior; View of main staircase.
 Palazzo Reale: Royal Armoury. Shield attributed to Benvenuto Cellini.
 Piazza Carlo Alberto: monument of Carlo Alberto.
 Monument of Emanuele Filiberto, Duke of Savoy, 1580, in the Piazza San Carlo.
 Monument of Cavour in the Piazza Carlo Emanuele II. Designed by G. Dupré; executed in 1873.
 View of the Via Garibaldi from the Piazza Castello.
 The Monte dei Cappuccini from the west, seen from the left bank of the river.
 Statue of Duke Ferdinand of Genoa in the Piazza Solferino.
 View of the river Po from beneath the Ponte Vittorio Emanuele I, looking towards the Monte dei Cappuccini.
 Via di Po and the Via della Zecca from the Piazza Castello.
VENICE—Map of Venice. 2 sheets.
 View of the Canale Grande and Canale della Giudecca, showing the churches of S. Maria della Salute and II Redentore.
 View of the island of San Giorgio Maggiore from the north. 3 sheets.
 The Piazza looking towards St. Mark's and the Campanile.
 View of the Piazzetta from the Canale di San Marco. 2 sheets.
 Arsenal: the main entrance; Detail of lion at entrance.
 Library of St. Mark's.
 Libreria Vecchia: part of façade.
 Loggetta of the Campanile.
 Porta del Paradiso.
 Scala Contarini dal Bovolo.
 Scuola di San Rocco: main façade; Interior of large hall.
 Scuola S. Marco: entrance doorway.
BRIDGES—The Rialto.
 Bridge of Sighs. 2 sheets.
CHURCHES—View of S. Giorgio Maggiore from the Piazzetta.
 St. Mark's: main façade; Detail of central pinnacle; And the Campanile; View of interior.
 Santa Maria dei Frari: view of interior; Choir stalls.
 Sta. Maria dei Gesuiti: view of interior.
 S. Maria della Salute: interior view.
 S. Maria in Nazareth: view of interior.

- Ducal Palace: hall of the Senato; Hall of the Anticollegia; Hall of the Great Council; The voting hall. 2 sheets; Porta della Carta; Detail of upper portion; The court. 3 sheets; Bronze well-heads in the court. 3 sheets.
MONUMENTS—Statue of Bartolomeo Colleoni: detail view.
 Detail view of the lion of St. Mark's on the Piazzetta.
PALACES—Ca d'Oro: main façade.
 Palazzo Foscari, main façade; Pesaro, main façade; Vendramini, main façade.
 Contarini Fasan: view of façade.
 Grimani: the staircase.
 Rezzonico: façade to the Grand Canal.
VERONA—View of town showing part of the Arena.
 Amphitheatre: external and internal views. 2 sheets.
 Bridge of Castel Vecchio from the south-west.
 Cathedral: detail of main doorway; South doorway; West façade. 2 sheets.
 Piazza Erbe.
 Theatre: views of interior. 2 sheets.
CHURCHES—S. Anastasia: west doorway.
 S. Zeno Maggiore: view from south-west; General view of church and campanile from west. 2 sheets; Detail view of main doorway; Detail view of the bronze door; View of interior.
MONUMENTS—Statue of Michele San Micheli.
 Tomb of Can Grande I, 2 sheets; Can Signorio della Scala; Guglielmo da Castelbarco. 2 sheets; Mastino II. 2 sheets; Giovanni della Scala in the church of S. Zeno Maggiore.
VICENZA—Basilica: views of façade. 2 sheets.
VIESTI—General view of the town.

AUSTRIA.

- VIENNA**—CHURCHES—Votiv-Kirche: the exterior.
 Karlskirche: the west front.
 Stephanskirche: the exterior.
 Pfarrkirche zu Fünfhaus: the west front.
MONUMENTS—Equestrian Statue of Prince Eugene of Savoy; Archduke Charles.
 Statue of Schubert in the Stadt Park.
 Monument to Kaiser Franz I. in the Innerer Burghof.
 The Trinity column in the Graben.
 Monument to Mozart in the Albrechts-Platz.
 Albrechts-Brunnen.
STREETS—The Franzens Ring.
 The Reichsraths Strasse.
 Corner of Tegethoffer and Augustiner Strasse.
 Warehouse of Philipp Haas & Söhne.
PUBLIC BUILDINGS—Rathaus: view of main front.
 The Festsaal.
 Kursalon, in the Stadt Park.
 Reichsrathsgebäude: the Chamber of Deputies—interior.
 Natural History Museum: part of main front.
 The University: main front.
THEATRES—Opera house: exterior.
 The Hofburg theatre. 2 views of exterior.
 Deutsches Volks-Theater: exterior.

FRANCE.

- PARIS**—Arc de l'Etoile.
 Ecole Militaire: the main façade.
 Fontaine St. Michel.
 Hôtel de Ville: the exterior; View after the fire.
 Opera House: main façade.
CHURCHES—La Trinité: the west front. 2 views.
 Sainte-Chapelle: exterior from the north-east.
 St. Vincent de Paul: west front.

GREECE.

- ATHENS**—The Olympieion: view from the south-west; As seen from the Acropolis.
 Stoa of Hadrian.

Temple of Nike.
 Monument of Philopappos.
 Theseion : west front and south side. 2 sheets ; As seen from the Areopagus. 2 sheets.
 The Pnyx.
 The Areopagus ; And the Pnyx as seen from the Acropolis.
 The Tower of the Winds.
 Choragic monument of Lysicrates.
 ACROPOLIS—Acropolis from the Museum hill. 2 views.
 From the east. 2 views ; From the south-west ; From the north-west. 2 views ; From the west.
 Acropolis and the Olympieion from the north-east. 2 views.
 Acropolis from the Olympieion ; and the Theseion from the north-east. 2 sheets.
 General view of the Acropolis from the north-west, including the Erechtheion and the Parthenon.
 The Parthenon and the Erechtheion from the east.
 Propylæa : view from the west. 2 sheets ; South side ; Northern wing, detail view ; Eastern portico. 2 views ; Western portico. 3 views ; Views of interior, looking west. 3 sheets.
 View in the Museum.
 THEATRES—Erechtheion : general view from the east ; From the north-east ; From the south-east ; From the north-west ; From the south-west, various views ; West side ; The Caryatid porch. 4 sheets ; Detail of frieze ; Eastern portico ; Northern portico ; North door.
 The Parthenon : west front. 3 views ; East front. 3 views ; South-east angle ; North and west fronts. 2 views ; North-west angle. 3 views ; Interior view looking east ; And the City of Athens seen from the roof of the Parthenon.
 Theatre of Dionysos : various views. 5 sheets. The Odeion of Herodes Atticus. 2 views.

EGYPT.

CAIRO—The citadel and mosque of Sultan En-Nassir.
 Street views. 3 sheets.
 Tombs of the Khalifs : general view.
 Mosque of Kait Bey : the exterior ; Interior ; The sanctuary.
 Mosques—Sultan Hassan : the main doorway ; Interior.
 El-Azhar : the minarets.
 Mohamed Ali : the interior.
 GIZEH—The Pyramids : various views. 8 sheets.
 The Sphinx : various views. 3 sheets.
 The museum : main front.
 HELIOPOLIS—The obelisk.
 KARNAK—TEMPLE—Central aisle of the hypostyle hall.
 Various views of the remains. 3 sheets.
 Temple of Rameses III. : interior.
 LUXOR—Pylon and obelisk of Rameses II.
 THEBES—Temple of Medinet-Habu : general view ; Colonnade of the peristyle ; Royal pavilion of Rameses III.
 The Ramesseum : interior.

GERMANY.

BERLIN—Royal palace : north façade ; Interior ; various rooms. 7 sheets ; Entrance to chapel ; Interior of chapel.
 Kaisergalerie : the interior and exterior. 2 sheets.
 Reichsbank : main façade.
 Kaiserhof hotel : general view.
 Bird's-eye view, looking west towards the Royal Palace.
 View in Unter den Linden.
 Gendarmenmarkt. 2 sheets.
 MUSEUMS—Alte Museum : detail views of sculpture groups. 2 sheets ; General view.
 National-Galerie.

PARKS—Tiergarten : showing the Siegestsäule ; Monument to the Queen of Prussia ; Monument to King Frederick William III. ; The Goethe monument ; Views in the garden. 2 sheets.
 THEATRES—Schauspiel Haus : main façade.
 COLOGNE—Cathedral : south front ; South doors ; Interior ; the nave.
 DRESDEN—Siegesdenkmal.
 The Alt-Markt.
 Zwinger palace : general view ; Detail view of gateway.
 Königl. Hoftheater : the main front.
 CHURCHES—All Saints (English church) : exterior from the south.
 Frauenkirche : the exterior.
 The Catholic Hofkirche : the exterior from the south-west.

PALESTINE.

BEIRUT—Views of the town and neighbourhood. 5 sheets.
 JERUSALEM—Church of the Holy Sepulchre : the interior. 2 sheets ; St. Helena's chapel.
 Tomb of the Virgin ; Tomb of Elijah.
 Armenian church : interior ; The sanctuary.
 Various street views. 6 sheets.
 MOSQUES—Mosque of Omar : general view of exterior ; Details of external mosaics. 2 sheets ; The interior. 2 sheets.

SICILY.

CATANIA—Cathedral from the west.
 Fountain of the Elephant (facing the Cathedral).
 Street view.
 GIRGENTI—Temple of Concord ; Juno Lacinia ; Castor and Pollux. 2 sheets.
 MESSINA—General view of town and harbour.
 MONREALE—General view of the town.
 Cathedral : the cloisters, various views. 5 sheets ; Details of columns and capitals in cloisters. 6 sheets ; Fountain in the cloisters ; Various views of the interior. 3 sheets ; Detail view of west doorway.
 PALERMO—GENERAL—View in the City.
 View of the harbour and Monte Pellegrino. 4 sheets.
 La Marina.
 Arms of Palermo.
 Fountain in the Piazza Pretoria. 2 views.
 Interior of catacombs.
 La Cubola.
 La Zisa : view of exterior ; View of interior.
 The Porta Nuova.
 Opera house (in course of erection).
 CHURCHES—Cathedral : south side. 2 views ; South entrance. 2 views.
 Cappella Palatina : detail of capital ; Mosaic decoration, " Christ entering Jerusalem " ; View of chancel and altar.
 La Martorana : the campanile ; Detail of mosaic decoration, " King Roger crowned by Christ."
 S. Agostino : detail view of doorway and window ; Detail view of window.
 San Cataldo : view of exterior.
 S. Giovanni degli Eremiti : views of the church and cloisters. 4 sheets.
 S. Maria della Catena : façade.
 MUSEUM—Sculpture—The Ram of Syracuse (bronze).
 Hercules killing the stag (bronze).
 Carved wooden soffit.
 SEGESTE—The theatre : general view.
 Views of the temple. 2 sheets.
 SELINUNTE (SELINUS)—Remains of temple E.
 Sculpture from temple C. (Palermo Museum).
 SOLUNTO—View of the ruins. 3 sheets.

SYRACUSE—General view of the town.

The Latomie : various views. 9 sheets.

River Anapus. 2 views.

Greek Theatre : general view.

Remains of a Roman bath (?).

Roman Amphitheatre : general view. 2 sheets ; North entrance.

The Catacombs : interior of Chapel ; Interior view.

Palazzo Montalto : detail of windows.

Cathedral : detail view of west front.

S. Giovanni : portico and façade.

MUSEUM—*Sculpture*—Statue of Aphrodite. 2 views.

TAORMINA—La Badia Vecchia.

The theatre : various views. 4 sheets.

TURKEY.

BUYOUKDEREH—The quay. 2 views.

CONSTANTINOPLE—GENERAL—Map of the city and its environs.

General view of the city from the west.

View of the Bosphorus from Pera.

View of Seraglio Point across the Golden Horn.

The Bosphorus as seen from near Robert College.

The Bosphorus as seen from the neighbourhood of Galata.

The Bosphorus as seen from Roumeli Hissar.

The walls, showing the Seven Towers.

View of Stamboul across the Golden Horn.

View of the Hippodrome, showing the obelisks. 2 sheets

View of the tombs at Eyoub.

Fountain and castle of Asia.

Church of St. Irene.

FOUNTAINS—Fountain at the south-west side of Sancta Sophia.

FOUNTAINS—Fountain at Top Khaneh.

Fountain of Achmet I. : general view ; Detail view ;

Achmet III. : various views. 4 sheets ; Ainali

Tehesmé ; Kabataash ; Sultan Mahmoud. 2 views.

MONUMENTS—Column of Constantine.

Tower of Galata.

Tower of the Seraaskier.

MOSQUES—Mosque of Achmet : views of exterior.

3 sheets ; Detail view of main entrance ; Fountain in

the court.

Sali Bazar and Mosque of Djeanghir seen from the sea.

Mosque of Souleiman : exterior. 2 views ; Interior ;

Tombs of Souleiman and Roxelana ; Sultan Bayezid ;

view of exterior ; View of court ; Detail view of

principal entrance ; Yeni Valideh Djami : fountain in

the court ; Yildiz Kiosk. 2 views.

Sancta Sophia : exterior from the south-east. 2 views ;

Views of interior. 14 sheets.

PALACES—Dolma-Baghtcheh : view from the sea includ-

ing the Mosque of Valideh Djami ; Entrance gates.

2 views.

Palace of Tcheragan Serai : detail view of internal door-

way.

The Seraglio : entrance to Hirkal Sherif Odassi ; The

Imperial entrance and the fountain of Achmet ;

Chamber of Circumcision ; Door of the Harem.

Yildiz Kiosk and mosque.

Palace of the Hobbomon.

GUEUK SOU—Views of the Sultan's Kiosk. 2 sheets.

KAVAK—View of the Hieron.

ROUMELI HISSAR—Roumeli Hissar as seen from the

opposite bank of the Bosphorus.

SCUTARI—Cemetery at Scutari. 2 views.

Castles on the Asiatic side of the Bosphorus. 2 views.

TOTAL :—509 PHOTOGRAPHS.



JOURNAL

OF

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS

Seventy-eighth Session—1912-1913.

THE OPENING ADDRESS. By the President, Mr. REGINALD BLOMFIELD, A.R.A.
Delivered at the First General Meeting, Monday, 4th November 1912.

IT has become the custom of this Institute to look to its Presidential Addresses for announcements on matters of serious interest to the profession, for the foreshadowings of policy, sometimes for sanguine anticipations of ideals that we should all like to see realised. You will recollect the frankness of my predecessor in this Chair and the zeal with which he attacked the difficult problems which confronted him during his term of office. Many circumstances combined to make his tenure of office more than usually full of arduous situations. I who have the honour to succeed him do not look for a series of alarms and excursions. Rather, so far as I can see, the time has come for a steady consideration of our position, and for a period of serious, if less brilliant, development on practicable lines. I hope I shall not disappoint you if I say that I have no heroic policy to offer you, no infallible panacea for the many difficulties that lie before us; but I shall ask you to follow me in the suggestions which I shall put before you as to the present position, and to help me on your part with your clear, unprejudiced, and close attention.

The points which I would ask you to consider with me to-night are: The Position of this Institute; the Position of the Architect; Registration; and Education. I will deal first with the Position of the Institute.

We have, in the last two or three years, incurred a large expenditure, and this has induced some anxiety among our members in regard to the future. I think I can safely reassure any member who has an uncomfortable feeling of insecurity. As a body this Institute has never been so strong as it is to-day. The total of its membership, including Licentiates, amounts to some 4,700, in addition to the numerous class of Probationers and Students from whom the members of the future will be drawn; and I would remind those of the latter class to whom the Insurance Act applies that an Architects' and Surveyors' Approved Society under the Act has lately been formed by the Architectural Association, with the approval of this Institute and of the Surveyors' Institution. The net-work of Allied Societies, working in close relation with the central body, now covers not only the United Kingdom, but practically the whole of the English-speaking Dominions, and your Council has recently taken in hand the consideration of the relations of the Allied Societies *inter se* and to this Institute, in order that no district shall be without a representative body to assist the architects practising within its boundaries.

The constant reference to the Institute in matters of public importance I need not touch on, because it is a matter of common knowledge to all of you. In regard to our financial position, as virtual freeholders of these fine premises, which have recently been enlarged and improved, the Institute is in a more secure position than it was two years ago, when it was merely the holder of a lease of half these premises with some fifty years to run. Such a serious undertaking has necessarily put a temporary strain on our finances. In the years 1909, 1910, and 1911 the Institute spent about £31,000 on the purchase of these premises and their repairs and rearrangement, skilfully carried out by our Hon. Secretary, Mr. Hare. In addition to this, the Town Planning Conference involved a capital expenditure of £2,235. To meet these liabilities the Institute had in hand £21,095 capital. The result was that during these years we had to borrow from our bankers the sum of £12,144. But the soundness of our finances is shown by the fact that by the end of last year our indebtedness was reduced to some £9,000, and we have reason to believe that in this and following years an annual surplus of income over expenditure will enable us to reduce our debt by at least £1,000 a year. I need hardly say that the sooner the whole of this debt is wiped off the better, and this is the more necessary as there still remains to be dealt with the mortgage of £4,000 which we took over with these premises from the Architectural Union Company. There is much that the Institute would like to do, and yet hopes to do in the future, which your Council do not feel justified in undertaking till this debt is cleared: our splendid architectural library, for example, perhaps the finest in this country, should be kept up to date by the purchase of the best contemporary publications both in this country and abroad, but at present your Council is not always able to follow the legitimate representations of the Literature Committee for financial reasons. Then there is the pressing question of the payment of our Examiners, long ago recommended by the Board of Architectural Education, but as yet unrealised for the same reason, and all that the Institute can offer to these gentlemen who place at its disposal their highly skilled and valuable services, is its platonic, if very genuine, gratitude. I would remind you also that the promotion of Registration, whatever form it may take, must in any case mean the expenditure of money, possibly of a good deal of it. I venture to suggest one obvious means of adding to the sinews of war, and that is that those Associates who are qualified for the Fellowship should take up their Fellowship without further to do. The status of a Fellow of the R.I.B.A. is assuredly a distinction, and I suggest to you that all our Associates ought in due course to proceed to the Fellowship, and that the senior Associates should give a lead to their juniors by taking up their Fellowships at once. I appeal to you as good sportsmen to lend a hand in this very practical way, having regard to the facts that I have now laid before you. I would say again that our position is perfectly sound, but it is only common sense to deal with our existing liabilities before we embark on large enterprises, whose end, however desirable, must be to some extent problematical.

The position of the architect as a professional man has given ground for a good deal of anxious consideration in the last year or two. Adverse verdicts have been given in the Courts, which appear to saddle us with unfair and impossible responsibilities, and there can be no doubt that the position of a practising architect to-day is more difficult than it was forty years ago. He is expected to know a great deal more, and to do a great deal more for his money, than was expected of his predecessors in the halcyon days of the 'seventies. Applied science has developed so fast and in so many directions that it is impossible for an architect to keep pace with every branch of it; and beside all this, he has his own art to master. For when all is said and done, the first business of an architect, that which differentiates him from other men, is his power and knowledge of design; and that, in the chaos of modern styles and the kaleidoscope of fashion, is not less but more difficult to acquire now than it was 150 years ago when everybody worked in one manner as a matter of course, and every village builder knew the Orders. And it is more difficult than it was fifty or sixty years ago when hygiene was a negligible quantity,

electricity as a commercial power unknown, and the builder was a man who really knew something of the practice of building. At the same time, I think there has been an unnecessary scare in this matter. We architects have, and have always had, our responsibilities to our clients, and, provided an architect knows his business, watches his work, and takes due care of his clients' interests, I do not think his position is one of greater danger than that of other professional men. The pressure of competition is keener than it used to be, and the standard of attainment is higher, but this is due in the one case to causes beyond our control, in the other to our own efforts; and what we have to do is, on our part, to qualify ourselves for our responsibilities, and to stimulate in the public a more intelligent appreciation of the services that an architect can and ought to render. If the public understood that an architect is an individual with the necessary limits of an individual, and not merely a wholesale *entrepreneur* on the one hand, or a building policeman on the other, there would be less of the regrettable misunderstandings that sometimes occur in the practice of architecture; but architects should not forget that the only effective passport to the appreciation of the public is the merit of their own personal work, and that if the profession of architecture is to receive a higher recognition in the State than it obtains at present, it can only do so by insuring a high standard of education and attainment among its individual members.

This brings me to the thorny question of Registration. In this matter, if you will bear with me, I wish to explain certain developments that have formed part of the history of this Institute. Over twenty years ago I had the honour to be an Associate Member of Council, and about that time a move was made in the direction of Registration, which appeared to some of us, old as well as young, to be heading off architecture into a *cul-de-sac* of unmitigated professionalism. But since those days much water has flowed under the bridge. Free discussion has cleared away the misunderstandings of earlier days, the Institute has taken a very active and, if I may say so, in regard to its members, self-sacrificing part in the reorganisation of education, and there has grown up a fairly general consensus of opinion that Registration, in some shape or another, is desirable, not only in the interests of architects, but in the interests of the public. So far this Institute is pledged to the policy stated in the report of the Committee of 1907, and your Council has for some years endeavoured to give effect to that policy. Your Council can hardly hope to produce a scheme that will at once satisfy all, or nearly all, shades of opinion, and also be within the range of practical politics—this last is important—for I think you will agree with me that, if you run a horse, you should run him for all he is worth, and that it is unworthy of serious men of affairs to waste time and money on mere *ballons d'essai*. We are after a practical scheme, one that will protect both the public and architects. Various solutions have been proposed. So far none of them have met with general acceptance, but it must not be supposed that the labours of the last few years have been wholly in vain. They have at least shown us some of the difficulties in the way, and have brought it home to thoughtful men that this is a very difficult and intricate problem not to be settled off-hand, and that if a real and satisfactory solution is to be found for it, that solution will have to be built up by careful and exhaustive consideration of the case in all its aspects: of what is required by the public, of what is due to the architect, and of the effect of any such scheme on other professional bodies whose interests may be affected. And if after this careful consideration it is found to be impossible to go quite so far as some of the more ardent of our Registrationists might desire, I would remind them that half a loaf is better than no bread, and I would appeal to them, and indeed to all of our critics, to have patience and not to take the bit in their mouths and bolt. It is no use striking before the iron is hot, and it has become clear that there are many issues to this question, all of which must be dealt with before it will be possible to reach the psychological moment of solution. The conditions of modern society are so complex that it is impossible to deal with any of its problems in watertight

compartments. What may appear to us as very clearly in the public interest may seem less convincing to our neighbours on the other side of the fence; and the experience of history is conclusive that drastic changes are not to be made *uno ictu*. If such changes are to take their permanent place in the social organisation, they will only do so as the result of much previous effort, of anxious thought, of the slow attrition of those awkward angles which have split up many a well-meant scheme of reform. One of the first acts of your new Council has been to appoint a large and carefully selected Committee to consider the whole question of Registration, and it has strengthened it by the addition of a number of representative members from the provinces. I would ask you to give this Committee time to deal with the question in all its bearings, and, when the recommendations of the Council come before you, not to look for impossibilities, but to give it your careful consideration as practical men of affairs, and with an anxious regard to the future of architecture. For, after all, whether members of the Council or not, we are but trustees for the next generation, and it should be our business to hand on our inheritance, not tarnished or diminished, but greater and more splendid, because it is held on the terms of a higher standard of attainment. On one point I feel sure we shall all agree. The object of a Registration scheme should not be to make architecture a close profession, regardless of professional skill. We do not want to repeat the history of the Trade Guilds in their later days, when their object was to surround their members with a jealously guarded ring-fence of monopoly. Our object is to put a stop to incompetence, and to establish and maintain a reasonable level of accomplishment, and to see that that level is reached by those who undertake the very responsible work of an architect. There is not a man in this room who would not say "*la carrière ouverte aux talents*," but what we insist on is that the "*talent*" should really be there, and that is the substantial issue to which Registration should be directed. It should be really and effectually the hall-mark of professional competence.

So, by this roundabout way, we come back to the vital question of Education, or rather, as I should prefer to put it, a sound and thorough professional and artistic training as the basis on which any form of Registration must be founded. If we are to obtain public and formal recognition of the fact that architecture is not an art that can be practised by Dick, Tom, and Harry with advantage to the community, and that there is a difference in kind between the work of the trained designer and the architectural efforts of the gentleman who combines the practice of architect, auctioneer, and estate agent, we shall see to it, not only that our present standard is maintained by all who enter our ranks, but also that it is slowly and surely raised, so that there can be no question as to who is and who is not qualified to undertake the work that legitimately falls to an architect.

It is to this object that the Institute, through its Board of Architectural Education, has steadily applied itself during the last few years. Sir Aston Webb was the first and most admirable Chairman of that Board. I had the honour of succeeding him, and we can both testify to the unswerving sympathy and support which the Institute through its Council gave to that Board, and thereby enabled it to carry out the important and far-reaching reorganisation of architectural training, which has been quietly going on for the last few years. The syllabus of training for architectural students has been thoroughly overhauled, and quite recently a serious attempt has been made to render our examination a more effective and intelligent test of architectural capacity, and also a real stimulus to the artistic enthusiasm of our students. Design, the adequate invention of buildings which are good to live in and to look at, is after all the essential object of our training. Many studies are necessary as subsidiary to this, but the aim of our training must always be to make our students competent architects, artists to whom the methods and materials of building are as his canvas and colours to the painter, or his bronze and marble to the sculptor. The initiation of a test in design, which is to some extent competitive, is an important step forward, and a further development of that reorganisation of our

methods of training which has been one of the most valuable constructive works carried out by the Institute during the last few years. And by design I do not mean scene-painting. Under modern conditions it is more than ever imperative that power of design and knowledge of construction should go hand in hand—that the architect should have the technical knowledge of building necessary to realise the flights of his imagination. Where the engineer stops at construction, the architect, as an artist, sees further possibilities of beautiful form and its combinations, and he should possess sufficient knowledge at any rate to start the realisation of these possibilities.

At the meeting of the British Association in September last, Professor Archibald Barr gave a very able address on the duty of the engineer to the community, and in the course of it called attention to the unfortunate severance of engineering from artistic design. The engineer, he said, takes a too exclusively utilitarian view of his calling, and architects have not sufficiently mastered the science of steel construction to be able to design in it freely. I think there can be little doubt that Professor Barr is right in his contention; and the conclusion to be drawn from it is that in the modern practice of architecture the necessity of the study of scientific construction becomes more and more urgent. That is a point that will not be lost sight of in our scheme of architectural training, and I may assure you that on this point our Examiners are adamant. Yet there are one or two considerations which I venture to offer, to reassure the old-fashioned lover of bricks and mortar. I do not believe that the whole future of architecture rests with steel construction or reinforced concrete, any more than I can believe that the whole future of painting lies with the Post-Impressionists or the Cubists. Brickwork and masonry must always hold their place in building, and though architects will do well to avail themselves of all the resources of applied science, that is no reason for throwing up their familiar tools and rushing headlong into methods, however brilliant their promise, which have not yet stood the test of time.

We artists have to live in an age of science, and science is steadily invading the territory of the arts; not content with brushing us aside as people of no account, it has stolen our one ewe lamb, it has annexed the term "beauty" for its own purposes, and misled the public by using it in a sense of its own. In consequence of this insidious misuse of the middle term, we artists wake up to find our work judged by irrelevant standards, and condemned accordingly. One hears the term "beauty" applied to subjects so diverse as St. Paul's or Westminster Abbey, to the steel-work of the Gare d'Orléans or to some complicated piece of machinery. Now it is obvious that the same thing cannot be meant in each of these instances. In the case of the buildings, we mean that our sense of rhythm and proportion, our enjoyment of light and shade and the like are gratified; in the two latter cases that we derive intellectual satisfaction from the exact solution of a problem of construction or mechanical function; and it is only because we are lazy or careless of speech that we talk of "beauty" in the case of the steel roof or the steam engine. There is, of course, a borderland, where our pleasure is partly æsthetic and partly intellectual, such as the scale of a great dam, or the lines in perspective of an ironclad. But from the point of view dealt with by Professor Barr I suggest that the term "beauty" as applied to steel construction means technical beauty—that is, that its appeal will be to the intellectual satisfaction given by perfectly efficient work, rather than to the æsthetic enjoyment to be derived from the "ordonnance" of noble architecture. One is, therefore, the less daunted, and I do not think that architecture is going to be stranded high and dry by the engineer; but I heartily endorse Professor Barr's appeal for more thorough study of construction and for closer co-operation between the engineer and the architect. The two should pull together and should do so from the first. It is no use asking an engineer to design a bridge, or even a shopfront as was recently suggested, and afterwards calling on an architect to invest it with "artistic merit." Both architect and engineer will have their views on the main form

and distribution, but they will have studied the problem from different points of view, and it is only by laying their different points of view together, before the treatment of the problem as a whole is decided on, that it will be possible to attain the unity of effect essential to monumental architecture.

I would take this opportunity of expressing our appreciation of the admirable spirit in which several of the Universities have endeavoured to give effect to the Institute scheme in their schools of architecture. The control of the Institute over the training of architectural students has been placed on an efficient basis by the organisation of the system of external Examiners. The Institute has been brought into satisfactory relations with the Universities, and is now recognised by them as the official centre of reference for questions concerned with the training of architectural students. We have our representatives in the schools of London University, the Architectural Association, Cambridge, Manchester, Liverpool, Sheffield, Glasgow and Edinburgh; and finally, at the invitation of the Board of Education at Whitehall, the Institute has undertaken to conduct, next year, the examinations in architecture of candidates in the National Competition of Art Students. The horizon of the work of this Institute is steadily widening, and the part that it is called on to play in the training of architects becomes each year of greater importance, of vital importance, to the next generation of architects, and scarcely less so to the public and to our own members, because, as I have ventured to assert already, trained technical ability must be the basis of statutory recognition.

In this branch of the work of the Institute prospects are very much brighter than they have been hitherto. The Jarvis Bequest has placed at the disposal of the Institute annually a scholarship of £200 a year tenable for two years; and within the present year, through the generosity of the Commissioners of the 1851 Exhibition, the new School at Rome, long dreamt of by this Institute, has been established by Royal Charter; the first instalment of the building is already in hand, and a scholarship of £200 a year tenable at this school for three years is to be awarded annually. The Institute has offered its hospitality to the Commissioners in regard to the examination for this scholarship, which will be the blue ribbon of the year. The jury will be the Faculty of Architecture, all of whom are members of this Institute. In these scholarships, and in the gold and silver medals of the Royal Academy, not to mention other scholarships and prizes, there are solid inducements to tempt the young man of genius out of his hiding. The importance of the scholarships tenable in the School at Rome will be obvious to all who recall their own days of studentship, those aimless and often solitary wanderings on the Continent, pleasant enough as a sketcher's pilgrimage in search of the picturesque, but of little value as artistic training, owing to the absence of intellectual discipline and authoritative guidance. Indeed, as a student of the development of architecture, I am sometimes tempted to attribute the weak points of the architecture of the last fifty years to the habit of indiscriminate and undisciplined sketching. I regret to admit that we have all of us done it: sometimes, it is but fair to say in self-defence, from the sheer pleasure of drawing some very drawable object—the sheer joy of draughtsmanship—more often I fear from a certain laziness and disinclination for the hard thought involved in the critical analysis of architecture. The results, alas! have too often been an unlicensed orgy of details snatched from every land and every style. But the sketching and measuring of actual buildings with a clearly realised object, and carried out with the aim of artistic analysis, becomes of inestimable value to the student, especially when checked by the free discussion of students working together. For the first time students will have the chance of working together, and in touch with their brethren the painters and sculptors, in that city which must always be the mother of the arts. The School at Rome may take years of patient effort to perfect, but we may look for great things from it in the next generation. One of the most serious difficulties in the modern practice of architecture is the absence of tradition, the want of a common method and of a recognised standard of attainment.

It is not too much to hope that in lapse of time it may be the privilege of the students at our School at Rome to restore this method and standard. That ideal is still far distant, and to complete our programme we must go further afield and enlist the help of all who care for our progress in the arts. I think the time has come when closer attention than it has hitherto received is due to the organisation of training in the arts in this country. Excellent work is done in our schools, but the schools are not sufficiently organised *inter se*, and there is need for further development both in regard to this and also in regard to the advanced stages of training in the arts. Our schools bring the students up to a certain point, and far ahead for the brilliant few there will be the artistic paradise of the School at Rome; but there is an interval between these stages to be bridged over, so that others, not among the brilliant few, yet good men too, may have the benefit of the most advanced training in design, with all the resources of a great establishment and the benefit of the skill and experience of the most competent artists. I believe that the want can be met by the development of existing institutions, but it is one that will require very serious and anxious consideration, in co-operation with such educational establishments as the Royal Academy.

In this short survey of the present situation of what I may call architectural politics I have endeavoured to indicate a certain unity of idea, and even of fact, that underlies the whole position. If the architect is faced by graver responsibilities than heretofore he must meet them by mastering his business and attending to it. This means more thorough training. If as a profession we are to succeed in effecting such further official organisation as will protect both the public and ourselves from the depredations of poachers, the foundation stone of that organisation must be systematic professional training, and it is, and will always be, one of the most responsible duties of the Institute to see that that training is really efficient, and its standard steadily maintained. In saying this I do not for one moment imply that our present methods of training are not efficient. They *are* efficient, whenever they are properly applied. The mischief is that they are not universally applied, or, to put it another way, that they are not insisted on in the case of all who set out to practise architecture. The strength of a chain is its weakest link, and however strong a profession may be in individuals it is the minimum of excellence that determines its position with the public. Thus it is that, by insistence on this training, with its corollary of a widespread level of accomplishment, we may hope to build up in the mind of the public a real understanding of architecture. I fear that, until that is done, we shall continue to suffer from the unfortunate vicissitudes of art in this country, those failures of method and intelligence which result in constant disappointments, only relieved at rare intervals by some effort of individual genius or patriotism. I will not dwell here on the alarming architectural results that may arise from the bureaucratic instinct, that growing centripetal tendency in our State and municipal departments which deprives the public of the use of the best ability in the country, and so far hinders it from getting the best value for its money. Nor need I enlarge on such matters as the lack of organised protection for our national monuments. A Bill for their protection is now being considered by a Committee of both Houses, and you will have fresh in your memory an astonishing piece of vandalism which was only rectified at the last moment through the munificence of a distinguished statesman. Mistakes which are afterwards a source of the keenest regret seem to slip through by accident. In those far-distant days when real ability and solid attainment will be the condition precedent to the practice of architecture one may hope to see these evils remedied, because a sense of the place and value of architecture will be widespread among educated people. The serious importance of this art in the State will be realised, and with this keener sense of the gravity of the problems of architecture fuller trust will be given to those whose high calling it is to practise the art.

Lastly—and this time it really is lastly—there is the relation of the architect to himself. So far I have been discussing his position in regard to the public. But more important than

this is his own attitude to his career, the point of view from which he regards the work of his life. There is a real danger, in all this whirl of architectural politics, of our forgetting that first of all we are artists, and that the art which we practise is a very great and a very old one. The cares of business, the keenness of competition, the feverish haste of modern work, are apt to reduce the lamp of art to the merest flicker if they do not put it out altogether. Those of us who have wide experience of practice know how difficult it is to keep that lamp alight, but here I am addressing myself not to my seniors and contemporaries, but to our younger members: to those who will take our places and carry on our work. Scholarship and research have always been among the best traditions of this Institute. I need only recall such names as Donaldson, Cockerell, and Penrose, and remind you that whatever view one may take of the historical justness of the Gothic Revival, there can be no question of the intense enthusiasm that inspired the labours of such men as the younger Pugin, Street, Burges, and Nesfield. If you turn over the pages of the earlier volumes of our *TRANSACTIONS* you will find papers on matters of serious interest, marked by a learning and ability that give them a permanent value in architectural literature. I hope, and I do not doubt, that that tradition will be worthily maintained by the rising generation. Current politics may be fascinating, but they are the outside of the cup and platter, they are a very poor substitute for that patient forging and perfecting of your artistic armament which will enable you later to practise your art with the enjoyment that comes of real mastery. And to those that have enthusiasm this labour will be a perennial delight, the joy that is to be won from the study of past art. Who of us, after all, does not look back with vivid pleasure to those wrestlings with the mysteries of some great Cathedral, quiet hours with pencil, note-book, and two-foot rule spent in some exquisite chapter-house, long autumn rambles among the time-worn buildings of historic cities? These things are the privilege of the architectural student, and it is this touch with the past that gives to our work its abiding interest. You may recollect the old Greek game of the *Lampadephoria*, where runners took torches lit at the altars of Prometheus, Athene, and Hephaistos, and passed them from hand to hand till they reached the winning post. That, gentlemen, is our position. It is our business to hand on the torch of architecture. Some of us may be getting old and stiff in the joints, and may have to content ourselves with painfully nursing the flame. It is for you of the younger generation so to train yourselves in your calling that, when the torch is passed into your hands, you may fan it to more vigorous life, and enable it to shine again with all the splendid brilliancy of the great ages of architecture.

VOTE OF THANKS.

THE RIGHT HON. THE EARL OF PLYMOUTH
[*Hon. A.*]: It is my privilege to move a very hearty vote of thanks to our President for his extremely interesting and able Address at this the opening meeting of the 78th Session of the Institute. The President has given us a most interesting survey of the position of the Institute; he has indicated the general policy of the future with regard to its internal administration, and its intentions in the matter of architectural education. These are matters which I have no claim to criticise, even if I desired to do so, and I cannot with any useful purpose comment upon them. I can only, as having the privilege of moving this vote of thanks, on behalf not only of myself but, I am sure, of all those in this room, thank him for his most helpful and able survey of the situation, and for all that he has said

with regard to the future of the Institute. There is, however, one matter that I may refer to which the President has mentioned in his Address. In looking round the walls of this room and seeing the drawings there displayed, it comes very vividly to one's mind that ancient buildings and ancient monuments play a very large part in the architectural interest of our surroundings. The President has reminded us that the Government have introduced a Bill into Parliament with the intention of dealing with the preservation of ancient monuments. A Committee is now sitting, but as it has not yet reported to either House of Parliament, it would not be right for me to go into any details of the Bill. But, if I may, I should like to remind you of one or two great difficulties which confront us in dealing with this question

and finally to make an appeal to the Institute with regard to it. There are two extremes which confront a Government in taking this matter in hand. One I may describe as the method that has generally been practised in this country hitherto, and that is, not to interfere with those responsible for the protection of ancient buildings and ancient monuments—whether they be trustees of more or less public bodies connected with the buildings, or whether they be private owners—but to leave them alone, in the hope and confidence that they are alive to their responsibilities and will do their best to keep the buildings in a proper state of preservation. Although there are Acts dealing with the protection of ancient monuments in this country, they exercise so very limited a control that it may not unfairly be said that we have hitherto gone to the extreme of leaving the matter severely alone. On the other hand, the practice of other nations in Europe is being constantly quoted to us; but I think we ought to be very cautious of taking the practice of other nations as a guide for ourselves. I much doubt whether the power that has been placed in the hands of Government Departments, or Special Committees appointed for this purpose, has been in all cases successful in the treatment of ancient buildings in the large European countries. At any rate, we may profit by their experience. We need not go to the other extreme and hurriedly adopt organisations which we may find not only unsuitable to this country, but which have not been really successful in the countries where they have been adopted. The Government, I venture to hope and believe, are approaching this question with care, and will endeavour to constitute some organisation which shall, in the first place, assist those who are responsible to get expert advice, and to deal with these buildings with the help and assistance of persons who are competent to advise as to their proper preservation. One of the greatest difficulties of all is to set up any Advisory Board, or Ancient Monuments Board, which shall have the complete confidence of the country, and whose advice would appeal to the good sense of those interested so that they would be willing to follow it in the preservation of the buildings under their charge. And this is the appeal which I would like to make to the Institute—for, after all, though there are representatives of archaeological societies and representatives of artistic bodies who might well belong to such an Advisory Board, it is to the architects who have studied the various modes of building, ancient and modern, to whom we should finally look for the more effectual preservation of our ancient buildings. I think it will be agreed that taste and knowledge have changed throughout the whole country within the last half century or so—and especially among the architectural profession, for they naturally have studied the question more deeply. Some of the eminent architects in the

mid years of last century attached more importance to matters of construction—the permanent stability of the building was their chief consideration; reverence for the ancient stones appeared to be the last thing thought of. But all this has changed, and there is now a general feeling among the public that we have a duty to perform, and that we must take what means we can, not to “restore,” but to preserve our ancient buildings and monuments. And, as I say, it is to the Royal Institute of British Architects—and especially to them, as the leading Society and Institute in this country—and to its allied architectural bodies that we must finally turn for expert advice. This is a question that I have not only paid a good deal of attention to for some time past, but I have been engaged quite lately in Parliamentary Committee work dealing specially with this subject; and it has been borne in upon me that we must proceed with great care and caution, that we must not be faddists in the matter, but must turn finally to those whose training and experience have given them the right, I think, to the final word as to how these ancient buildings should be treated. I should like, in conclusion, to renew my thanks to the President for his Address, and to move that we give him a very hearty vote of thanks.

SIR ASTON WEBB, R.A., C.B., C.V.O. [F.]: I will not disguise that it is a very great pleasure to me to be permitted to second this vote of thanks to our President for his Address. We are all delighted to see him; we congratulate him, and we congratulate ourselves that we have Mr. Reginald Blomfield in the chair as our President. We know him as an architect of distinction, as an architect who has a great literary gift, and who has already written in a most useful way for us all on the English and the French Renaissance. We know, too, that as a young man he took very high University honours. Mr. Blomfield has also a side to his character which will appeal still more, perhaps, to our younger members in that he is a good sportsman all round. When the Royal Academy students have their annual match at Lord's, their first thought is to get our President to play for them, and on a recent occasion he scored over 100 runs off his own bat and got them so quickly that the poor scorers had at last to throw up the sponge as they were unable to follow him! He is also an excellent rider to hounds, and has more than once, I think, lighted on his head on a fence, and been none the worse for it! That will show you that his head is all right! He is also a good shot and an excellent lawn tennis and billiard player. But I have said enough, ladies and gentlemen, to show you that he is a good all-round man. It is said that the practice of an architect is apt to make a one-sided man, but on this occasion we have got a many-sided man, and if I were to describe him in technical language, I think I should say that we have a polygonal President! Then, gentlemen, we

are very glad to see him here for another reason. I look upon him, sitting there, as a sort of symbol of reconciliation and unity amongst the members of the profession and the Institute. We who have been members of the Institute for many years feel inclined to say, "This our son was dead and is alive again, was lost and is found!" And now that we have found him, we intend to keep and to make the most of him. It seems rather a strange nemesis that the first thing our President should have to do is to see if he can organise some system of registration, the very matter which was the cause of his leaving us, and about which now the less said the better. But, as I have said, we are united now, and I believe there is a determination on the part of all those who have the welfare of this Institute at heart—whether they believe in registration or not—to try and see if, by putting our heads together, we cannot hit upon some means which shall give as much as possible to those members—and there are undoubtedly a large number of members—who desire to see some form of registration. We are determined, if we possibly can, to hit upon some scheme, honestly and sincerely to work it out, and submit it to this body as a means of putting an end to this business, which has gone on for so many years, and of which many of us are heartily tired and would like to see finished off, so that the Institute could be left free to take up matters which would be more advantageous to architecture and more advantageous to the members of our Institute. You, Sir, I think from listening to your Address, look upon the education of architects as the great object in which you are interested, and which, I venture to think, is the way in which the Institute can be of untold good to architecture as well as to its members. We know that you have helped largely to mould the scheme of education which is now gradually taking shape as a definite and organised system, and which we believe, as it goes on, will be of very great use for the improvement of our art. You have also adumbrated the possibility of some advanced training in the nature of a diploma course. I, for one, have always hoped that something of the sort might ultimately be arranged, and I hope, Sir, that while you are in this chair that will be one of the things that, when you leave it, you will be able to say has been accomplished. I do not think it is an impossible thing to do, and I believe it would be of very great use if it could be brought about. You mentioned the Royal Academy. I have no authority whatever to speak on behalf of that body, but I think I know enough about the working of it to say that if they were approached they would give a very sympathetic hearing to it, and would give it all the aid they could. The Academy is far more ready to assist in schemes of the sort than some people seem to think, or perhaps care to admit. I

am quite sure they would do everything in their power to assist it. The work of our Institute is naturally divided into two divisions. Lord Plymouth has spoken of one, the care and study of ancient buildings. That is one side of it. Then there is also, to some extent, through our Architects' Benevolent Society, the care of those who have fallen in the race. As I have mentioned the Architects' Benevolent Society, perhaps I might say that, as usual, that Society would be extremely glad to have some additional subscribers. There are many more applications for assistance than there are funds adequately to respond to. The other division of our work is the one we have been talking about—education; and while the first mentioned is a sad duty, the other is full of hope, of hope that we may be able, by educating our young men, to ensure that in the future there may be a better trained band of architects than there is at present. Our art is different from all others, because it means what Ruskin speaks of as the "fraternity of toil." We must work together and help each other. No great buildings ever were built, and no great buildings ever will be built, unless they are built by men who assist and help each other. And so it is that we must try to help these men, to turn them out better equipped than ourselves, and to anticipate with pleasure the time when they shall declare their distinct, and possibly their opponent, skill, and look forward with pleasure to see them surpass us. As it is late, I will not take up your time any longer, except to second most cordially this vote of thanks to our President for his Address and for the delight which we have had in seeing him in the chair this evening.

THE PRESIDENT, having briefly responded to the vote of thanks, continued: I must now call the attention of the meeting to the most interesting collection of drawings displayed on the walls. They are not very well known to members, although they have been the property of the Institute since 1838. I will read you a letter which our excellent Librarian has unearthed for me, written by Sir Charles Barry to Professor Donaldson when the drawings were presented to the Institute in 1838. They were presented by Sir James Drummond Stewart. Sir Charles Barry writes:—

4th May 1838.

DEAR DONALDSON,—I have the pleasure to forward to you another collection of original drawings and designs by Bibieni and others, as a further donation to the Institute on the part of Sir James Drummond Stewart, who assures me that on account of their value in his estimation he should part with them with much regret if he were not persuaded that they will be fully appreciated by their new possessors. . . .

They are, continued the President, in some ways the most remarkable collection of architectural drawings I have ever seen, and I hope you will look at them before leaving.

THE APPRECIATION OF ART.

By RAMSAY TRAQUAIR [A.].*

I PROPOSE this evening to consider some general questions affecting art, and that as an appreciator or an onlooker rather than as a producer. The greater part of our time in this College is necessarily spent in studying and practising the production of works of art. Such is the primary purpose of a College of Art, and we who study here look forward to spending our lives in the production of art in various forms—in buildings, pictures, statues or other objects. But there is another point of view, and even as artists it is desirable that we should understand it. It is the attitude of the intelligent onlooker, who, though he may never produce anything himself, desires to understand and appreciate the work produced by others. Appreciation is not a mere matter of caprice, we must not be satisfied by saying, "This pleases me," "that does not." The question of what pleases us may decide what works of art we will place in our houses, what kind of house we will live in, or what scenery we will admire, but our mere personal pleasure is not a sufficient standard by which to judge all art, for a work may not please us and yet be great. By a little study we may learn to feel more widely and to recognise and find pleasure in qualities which at first were not apparent. Even as artists we should understand and practise appreciation, for a sympathy with others is of value in completing and in enriching our own work. Towards our fellow artists, particularly towards those who practise some form of art different from our own, we must always be onlookers; yet all art is one, there is not one art of poetry, another of sculpture and a third of craft workmanship. The means of production, the materials employed may be different, but the essential quality which constitutes a work of art is the same in all, and it is only by an understanding of this quality that we may hope to understand and to profit by the work of others.

That appreciation and sympathy have been felt necessary is evident from what we know of the past. We find that artists have at all times banded themselves together for mutual appreciation and for the help that comes from sympathetic criticism. In recent times we may instance the Pre-Raphaelites, the Glasgow School, the impressionists and many other similar groups. Sympathy and criticism are in some way necessary and are felt to be helpful by the artist. He is not a hermit in the desert, and I think that we may safely say that every true artist belongs to some group, however small. It may be but a group of two, himself and his critic.

But we are not only artists, we are also human beings, and fellow-workers in the life of humanity. This fact is not altogether popular in some circles at the present time, yet it is an indubitable fact and must be faced. Unless art is of some use to humanity, unless it makes life better and richer,

humanity will pass it by. The artist is too often presented to us as an irresponsible child, an interesting alien to be regarded (as Professor Murray says) with a mixture of adulation and mistrust. Art is a luxury to be added to ordinary common-sense life, but which we could quite well do without. The falseness of this view is evident to every artist, but do we realise that it is the direct outcome of the artist's demand to be treated apart from humanity, and to stand apart from and above the common life? As a result he is only too often placed below it. Even genius does not so stand apart, for genius is not a quality which falls solitary from Heaven, it is humanity itself. A genius is great, not because he differs from humanity, but because he embraces so much humanity. Indeed, it is commonly said of genius that it reveals us to ourselves, yet how could it do so unless it were similar to ourselves? If genius were a separate and peculiar quality, the greatest artists would be quite incomprehensible. They would differ utterly from all men. Now we know that this is not the case. Indeed, this claim that artistic genius is something peculiar is actually degrading to the object, for it converts the genius from a great man to a mere monstrosity. And what applies to genius applies also to the lesser grades of artistic merit. The artist is and must be a fellow-worker in the State and must learn to sympathise with and to appreciate those who work beside him, must learn to criticise and to accept criticism not only from artists but from all who are honest workers in life.

This view, I need hardly say, does not involve a slavish submission to every whim of popular favour, nor does it require any sacrifice of individual freedom. The public indeed has been taught, and carefully taught, the uselessness of art, and that too often by artists themselves; yet in the greatest periods, as in ancient Athens or in fourteenth century Italy, we find the artist and the public in perfect accord, not separate, but working with one spirit towards a common end.

Among the Greeks, the principle of public service in art was strongly held. Aristophanes for instance in the *Frogs* asks: "On what grounds should a poet be admired?" and is answered, "For his skill, his good counsel, and because we make men better in their Cities." Denys of Halicarnassus sums up the praises of the Athenians by saying that they "made gentle the life of the world." The Greeks were great artists, and great and clear thinkers, and any word of theirs should be treated with respect.

I have said that art is one, and that under all forms of art there lies a common principle. The human mind is capable of two forms of knowledge,

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a scientific or intellectual form, and an emotional or imaginative form. If, for instance, I use the word "tree" you will all understand what I mean, a large vegetable with roots, leaves, and a wooden stem. But if I ask you to imagine a tree each of you would imagine a different object—one a pine, one an oak, another a palm tree. The scientific concept of a tree is an intellectual idea which comprehends all trees. It is a species of intellectual "treeyness," without individuality and incapable of being imagined. The emotional vision of a tree, on the contrary, is individual, separate and unlike every other tree. It is incapable of scientific description, but capable of artistic rendering. We cannot draw "horsiness" for instance, we can only draw a horse. No artist can convey to you the chemical means by which a tree converts air and earth into green leaves and wood. No scientist can tell you how the sunshine glints on its leaves and the wind murmurs through its branches, but the artist can tell you how these things affect him. If he does so in paint he is a painter, if in words a poet.

The actual poem or picture which we see is the record of an impression in the mind of the artist and is composed of certain materials, as paint, words or stone, according to the particular craft practised by the artist. These materials are very largely what we study in a school of art, and it will be useful to consider strictly what they are.

Firstly, we have the substances and tools which we manipulate. The painter has his canvas, his paints, his brushes; the sculptor his stone, his clay, and his chisel; the poet his words. Of these, we must learn the various possibilities and capabilities. The architect must learn that columns can be made of steel; the sculptor that models can be made of clay. This is elementary knowledge, but necessary. Next we have technique—the manner in which the paint is put on the canvas or the pencil guided on the paper, the manner in which stone can be cut to form mouldings and to give particular effects of light and shade. This is a more difficult study. It takes many years of practice to place the paint mark unerringly in the right place or to use the words of the poem with their fullest meaning, and all great artists have to a great extent developed and produced their own technique. Still, this is not art; no dexterity of technique will ever produce a great work of art. It is a necessary material. Thirdly, we have the objects of external nature. Of course we are natural objects, and the human mind is natural, but we can make the distinction between human activity and nature external to it, the sky, the fields, and the flowers, and it is in this sense that we will use the term "nature." It is easily seen that in certain arts nature is a material. Although we may use natural forms in designing a cup, the form of the cup is based not on nature but on the necessity of drinking therefrom, and perhaps we do not realise that natural forms are as truly materials in art as are stones or paint. The painter studies the forms of the hills, of trees, of flowers, of

the human figure, in order that he may use them to express emotion, just as the architect studies the forms of arches, of columns, or walls, the craftsman the forms of cups or chairs, the poet the forms of phrases and rhythms, in order that each may clothe therein his emotion.

We accordingly have three divisions, at least, of material—the substances of art, the technique, and the natural forms. These materials the artist must combine and arrange to form his work of art, whether he be painter, poet, or architect, and with all of them his mind must be well stocked; the painter must know how to make paint marks, the architect how to shape stones, and the poet, not unfrequently, has been known to read and to learn the dictionary.

It is generally agreed that any work of art is the creation of the artist's mind. It is not a transcript from nature; it is not a copy of a previous work; it is a new creation or arrangement made up of materials, perhaps often used before, such as we have just considered. These materials are rearranged so as to form and to present the artist's idea, his vision, in the most forcible manner possible.

Now if we consider we shall see that the artist's vision is itself made up of these materials. It is conceived in his mind as made of paint, of stone, of natural form, or of what other material he pleases. We can therefore simplify our definition of a work of art. It is simply the artist's emotion inwardly realised in the materials of his craft. Being formed in the materials of the craft, it cannot be formed unless the artist has a knowledge of these materials. The "mute inglorious Milton" is, in fact, an impossibility, for we cannot think like Milton without Milton's power of expression. Vague yearnings are not art. Before they can become art, they must be crystallised within the artist's brain in terms of paint, stone, or other material; but if any man has clear vision, his vision includes technique and form and material. An uncertain picture or a poor building is the result of uncertain or ignorant vision. Every one who has ever designed knows how such a vision arises. We have some design to make, some artistic problem to solve. Our first vague unformed feelings work and evolve in the mind. Almost involuntarily and often at the most unexpected moments solutions suggest themselves. We try them but at once they are seen to be unsatisfactory. They are not the idea and are thrown aside. Suddenly, often without warning, the solution comes. We know that the problem is solved. A rough sketch may be noted down, not now as a test of the solution but rather as an aid to our memory, for in reality nothing now remains to be done but to copy down our work, holding firmly by our now realised ideal, working it out, filling in the necessary details, all of which, if we hold by our first conception, will almost automatically fit themselves to their places, and the visible and external work of art is finished.

So powerful is the initial impulse of work so con-

ceived that we often feel the sensation that the picture or building is designing itself. The artist seems to be but the instrument in the hands of his own production. The sculptor knocks the stone away from a figure which already exists within the stone; the novelist in haste writes down the events which must happen, almost are happening, to his puppets. Work so done is direct, is done with great rapidity and rarely requires correction. It is usually the best of which the artist is capable, and possesses to the onlooker a curious quality of "inevitableness."

We have defined a work of art as the artist's emotion realised in the materials of his craft and have considered the manner in which this realisation takes place. The emotion itself must be based on or excited by something. We have heard it said that all art is based on nature—that is, on external nature; but, though nature is undoubtedly an important base for much fine art, the general statement will not stand consideration. We have already seen that in some cases, as in the design of a cup, nature is a material.

Architecture, for instance, is not based on natural form, it is often based on structure. The arch may occur in a few isolated natural accidents, but it is not used in nature as a natural form. The column and lintel are the result of the rudest effort to form a shelter, but nature never produced a column and lintel save by accident, and the combination cannot be called a natural form.

Again, whilst our emotions may be inspired by nature and by structure, they may also be inspired by purely human sources. From such we gain emotions of pity, of fear, of tenderness, of pride, and as all emotion may serve as the basis or the starting point for an artistic vision, so art may be based on such emotions. The arts of architecture, music, and poetry are often so.

We may accordingly expect to find art based: Firstly, on the keen appreciation of natural form; secondly, on a similar appreciation of structural form; and thirdly, on feelings not inspired by natural form, but which use natural form as a material. We could probably find further sources of artistic emotion, but these will be sufficient for our purpose, and we can see that an understanding and criticism of the feeling and basis of a work of art must be one of the most important preliminaries to a full appreciation.

Much of the work which we have to study belongs to the past, and here historical knowledge becomes of importance. In order to understand the work of any period we must understand the motives which led to it. Many of these emotions are the common property of the human race. Dignity was understood by the ancient Egyptians, by the Greeks, by the mediæval Frenchmen, and has not yet disappeared from our own minds. The feeling of mystery which Pharaoh's architect sought to express at Karnak we can still feel. We can, and often consciously do, deliberately throw ourselves

back, in thinking of such a building, till we can almost feel the presence of the mighty Ammon in his temple as did the worshippers many centuries before us. The complete absence of such an effort to feel with the past is very offensive, and we feel, for instance, that a man who, standing in Karnak, can refer to the ancient Egyptians as idolaters is not merely inartistic but inhuman. A little historical study will often open our eyes to new perfections which, without it, would remain unseen. In particular historical study will prepare us to appreciate the qualities which are really there and not to expect those which are absent and which were never intended to be there.

To no people do we owe more of our modern culture than to the ancient Greeks. Not only directly through classical study, but indirectly through Greek writings in the Bible and through Greek influence on Roman and mediæval civilisation, they have profoundly influenced our present life. Their art was of extraordinary perfection and the motives which produced it are well worthy of study. I have already spoken of the Greek attitude towards the artist as a fellow-worker in the State. If we examine Greek life and literature further, we find the greatest emphasis laid upon simplicity, temperance and refinement. A vulgar profusion was as objectionable as a vulgar meanness. It was as ostentatious to go clad in rags as to array oneself in gold and purple. Greek language, Greek dress, Greek poetry, and Greek architecture are alike absolutely simple. Yet in them we find refinements and delicacies of great subtlety, the steps of the Parthenon measure two hundred feet long and have a curve on that length of about four inches. Now, knowing the Greek love for simplicity and refinement, it were vain to seek for richness or elaboration in their work. The best Greek vase drawings show great beauty of line. They do not show any attempt at foreshortening effects; such would detract from the simplicity desired. In later times more elaborate drawing was attempted but we feel at once that the work is less valuable. The delicacy and simplicity of the early work is gone. That the Greek artist could foreshorten when or if he chose is amply proved by the copy of a Greek masterpiece, the well-known mosaic of the Battle of Issus at Naples. Here all difficulties of drawing and grouping are met and used in a manner which proves a well-practised hand.

Again the Greeks were clear and accurate thinkers and disliked anything approaching vagueness or mystery. We accordingly shall be disappointed if we seek for mystery in a Greek temple. It is not there and was never meant to be. If by chance any feeling of mystery had crept in, it would have been carefully eradicated.

We may contrast this with Oriental art. The Eastern mind loves profusion, elaboration and mystery. Persian poetry is elaborate and Persian art is florid. If we wish to understand the art of

the East we must accept this; more, we must revel in it. Every thousand black slaves of surpassing beauty, loaded with basins of gigantic jewels, added to a procession in the "Arabian Nights" must be an added joy. Elaboration is not a vice in Eastern art: it is its greatest virtue.

Now let us turn to primitive art. Here we find two leading characteristics; the desire to tell a story and the love of a pattern. These characteristics in Egyptian pictorial art led eventually to hieroglyphic writing in which the pattern and the story are supreme; but all Egyptian mural decoration is more than mere surface patterning, it is story-telling. In mediæval art we find the same thing. The carvings of a mediæval cathedral are more than fine decoration. They cannot in many cases be regarded as careful appreciations or studies of natural form: they were a means of conveying emotional as well as moral or intellectual instruction. A mediæval Book of Hours was illuminated in gold and colours not only because a book was a wonderful and precious thing, not only for the glory of God, but to rouse and instruct the devotion of its readers. Such illustrations were far different from the pictures in a modern novel. They pretended to no realism, but they told their story with a force and directness that could not be attained by printed words; it was a story which could only be conveyed by pictorial art. Unless we are prepared to accept this aim, mediæval art loses its whole power. If we accept it, the strange drawing, the strong colour and the simple symbolism become an essential part, inevitable and not to be corrected. For their object they are already correct.

If the mediæval artist, for instance, wished to represent the martyrdom of St. Thomas à Becket, he showed the saint clearly falling, his head well split, so that there shall be no mistake about that. To indicate clearly his sanctity, his hands are shown joined in prayer, a halo encircles his head, and in mid air an angel receives his soul. The assassins are shown brandishing their swords in simple attitudes expressive only of the act of striking. That they could not keep their balance for an instant is of no account; they must be striking. The sword of one is actually cleaving the saint's head. Their faces are ugly—no matter if historically each was an Adonis—the murderers of a saint must be ugly. The murder took place in a church, two columns and an arch will express that, but we need not expect a picture of the interior of Canterbury Cathedral.

So with all mediæval art. The artist did not for a moment imagine that St. Peter went about Heaven with two enormous keys, or that St. Sebastian was condemned to an eternal salvation filled with arrows; but so they are always represented. Otherwise we should not recognise them.

In every case the artist expressed his ideal and told his story with absolute frankness and without hesitation. We must ask him for no more than he gives. We must not ask for atmosphere, for

anatomy, for historical realism. That such things were desirable had not even occurred to him.

Now, since mediæval times, a great change has come over our civilisation. The Greek had loved clear and accurate thought. The mediæval artist had loved life, passion, and mystery. The modern mind more than anything loves knowledge. With the Renaissance came the birth of accurate knowledge, in fact of science, and from the fourteenth century to now we have pursued that object with ever-increasing ardour. As could not fail to be the case, the effect on art has been powerful. At first we find a union between the old passionate and vivid art of mediæval times and the more exact observation of the scientific mind, and thus arose the great schools of Italian painting and the schools throughout Europe of the fifteenth and sixteenth centuries. Gradually, however, the passion for knowledge, for intellect, became supreme in art. Classicism arose, and all branches of art were wrapt in a meaningless pedantry. In architecture no forms were to be used save those sanctified by the example of the Greeks and Romans; in painting, sculpture, and even in literature, the same principle was followed and art seemed bound in an iron chain, not of tradition, but of intellect—of knowledge. Such was, of course, an impossible position, for art cannot be based on intellect, but only on emotion; and indeed we find that the great works of the Classic period are great, not because they copied faithfully the details of Classic work, but because they convey the feelings of eighteenth century artists. St. Paul's Cathedral is a great work of art, not because it is Classic, but because it is Wren. Under this weight of intellect, architecture still suffers. One critic tells us that our only hope of progress lies in a faithful study of the buildings of ancient Greece and Rome; a second pins his faith to an equally faithful study of Gothic. Apart from his business qualities, with which we are not now concerned, the architect is expected to be rather a scholarly antiquary than an artist. Yet who would expect a modern poet to write alternately in the styles of Chaucer and of Pope, retaining with care in each case the archaisms of his model? Who would commission a portrait in the style of Vandyke? We see from other arts that the alternative to historic "correctness" is not unlicensed eccentricity; yet from the architect is demanded alternately that strange quality of "correctness," and that even stranger phenomenon, "a new style."

In painting one important development took place. The painter began for the first time to base his art on nature. The emotions he realised were now the emotions directly inspired by nature, his object was to set these down as exactly as possible, and thus inevitably arose the schools of landscape painting, now almost supreme in pictorial art. The emotions which may be inspired by nature are, however, very varied: one man is inspired by the intricacy, the delicacy of nature,

another by broad masses of light and shade; one will devote himself to the study of leaves and flowers, another to the realisation of all that cloud and sea mean to him. Thus have arisen the realists, the impressionists, and even the post-impressionists. This was the common aim of Whistler and of much Preraphaelite work, and thus we see that the difference between the minutest realist and a post-impressionist is not nearly so great as that between the work of either of them and the simplest mediæval drawing. The modern artist derives his feeling from nature. The mediæval from almost any other source of human feeling, almost never from nature, although freely using natural forms as material. The mediæval choice of subject is typical of almost all art up to the Renaissance. Human action and human feeling were the mainspring of mediæval art. Animals, birds, and beasts were man's poor relations; interesting in a lesser degree, they inspired him with grotesques, gargoyles, and bosses. In vegetables he was hardly interested. Mediæval foliage is as conventional as any acanthus scroll. Landscape he cared nothing about: it sometimes formed a background.

Whilst recognising that all art is founded on emotion we must not be led by this belief to despise or to under-rate the power of intellect. A high intellectual training is necessary to the artist. His emotions must be trained by his intellect; they must be curbed, restrained, and developed by intellect; and only by intellect can he amass that store of material which is necessary to the realisation of his completed work of art. We must also understand the quality of fine artistic emotion. It is not the mere untrammelled play of fancy or passion. The emotion of our great artists is often ascetic, always highly tempered and refined. The results of untrained and unlicensed emotionalism are at the best bad art. The results of pure intellectualism may be great, but they are not art at all.

This brings us to an important question—the place of ethical or moral ideas in art. We know that pure art has no connection with morals, as little as has pure science. The visions which rise in the artist's mind are of all kinds, but just as his emotions are trained by intellect so they are trained by the ethical ideas of his time. A great artist will not externalise and fix every emotional idea which may arise in his mind. We none of us speak aloud every thought regardless of its suitability. We select from the mass of unformed thoughts some which we may develop and externalise, and in this selection we must be largely governed by the economic and moral conditions of life. Thus the moral judgment must always be of value in the criticism of a work of art. We may take as examples those pictures which have been executed in which the leading motive is simply a love of cruelty. Pictures representing scenes of torture may be fine works of art and might so appear to beings devoid of human feeling. It were better

that they had never been painted by men for men to look at, for there are some things which, though they might arouse noble emotions in a mind devoid of all save the artistic qualities, are not to be endured by artists who are men as well as artists, and the artist who is not also a man is a monster.

Now for the appreciation of the art of past times we require some historical knowledge. To appreciate the art of our own day this is unnecessary, but the need for a broad sympathy is thereby rendered all the more important. Particularly in pictorial art the great variety of feelings which may be excited by nature renders an impartial judgment difficult. We are apt to limit the emotions which we derive from nature, and to limit similarly our appreciations of art. A great artist such as Whistler experienced keen and delicate emotions before an evening sky. Visions of great beauty formed themselves in his mind, and were transferred to his canvas. We, who look at his pictures, are privileged to enter into his thoughts so far as our more limited capacities will allow. We have a real communion with a great mind, and that at a moment when it was at its greatest, and the results for us are invaluable. To one who has studied Whistler, the shadows of evening, the dim silhouettes against the dark blue sky of night, will for ever be something greater. Our minds have learned a new range of feeling and have indeed absorbed some of the greatness of Whistler. On the other hand, we shall find artists whose emotions are roused by delicate detail, who devote themselves to the exquisite delineation of natural objects. Shall we scorn them because for them atmosphere has no charms? I think not. A rose, even a couple of straws, may arouse feelings as delicate and as valuable as an evening sky. The old Dutch masters found a vent for their feelings in glass bottles and dead oysters; and if we pass them by because of the lack of atmosphere we shall impoverish our own feelings. Even an evening sky may excite different feelings in different men, and if the feeling of the artist is one which is not that which we have been accustomed to associate with such a scene, it is perhaps all the more necessary that we should learn to appreciate that feeling also. The Preraphaelites, for instance, painted nature with exquisite care—perhaps neglecting certain tones, certain values, but perhaps also gaining thereby other qualities. However, in all art which is definitely based on nature, a faithful rendering of some aspect of nature is evidently necessary. In portraiture, for instance, a good likeness is of first importance, and if the artist fails to attain to that, his picture is simply a misuse of material, however fine it may be in other respects. The sitter was his material and he has abused him.

But much modern art is not based on nature. We may take as an instance the art of Blake. We are sometimes told that Blake suffered from a defective technical training. Did he? It is impossible to look at a page of Blake's work without

feeling the deep emotion which stirs in every line; the figures are full of strong, restrained passion, but they are not always anatomical. If we were to take one of Blake's drawings, and, tracing carefully over it, were to correct the anatomy and reduce the proportions to a more exact accord with nature, we might produce a more scientifically correct result, but we should assuredly lose all that makes it artistically valuable. Blake's technique was not defective, his drawing was not ignorant; it is indeed far wiser than most of us can ever attain to. Far from being kept back by ignorance, he was driven forward by artistic perception, and, judged by this standard, we must marvel at the accuracy of his drawing. It was an almost perfect instrument.

I have taken two artists of very different character, so different that the distinction is easily marked and appreciated, but some such judgment of motive must be applied to every artist. Some live, as it were, on the borderland. Their art, founded on human emotion, still shows an appreciation of natural form and quality. Such men as Watts or Burne-Jones were not in chief students of nature, they were students of humanity and, though they often show much appreciation of natural form, their real claim is of a different nature. If we seek atmosphere in Burne-Jones's work we shall be disappointed, atmosphere did not enter into Burne-Jones's vision. If we seek tenderness and love, harmony and colour, we shall get our reward.

Nor is there any real difficulty in thus learning to appreciate styles of widely different character, indeed some such effort is necessary if we would gain the greatest pleasure and benefit from life. All art must be approached in the right spirit. We must not approach poetry by way of grammar or architecture through archaeology. We must not approach Blake through nature, or Whistler through human life.

We often hear a picture, particularly an historical picture, praised on account of its accuracy of detail, its verisimilitude, and the care with which every costume has been studied from museums, every face made to recall contemporary portraits. Now is this art? It is, indeed, art of a peculiarly modern type, for it is art flooded and submerged by intellect. In this it truly represents our present age. In fact, it is not art at all. It may be science, though even here, as the painter never saw the occurrence, it is bound to be inaccurate, and therefore only bad science. Such works depend for their value on the human emotion felt and expressed, and where such emotion is present accurate detail may go and not be missed. The mediæval artist boldly depicted monks and bishops as spectators of the Crucifixion; his work is often greater than that of the modern artist who paints his background in Jerusalem. The one painted an everlasting truth; the other, too often, merely a tortured man. Verisimilitude, archaeological and topographical accuracy are not necessary to art. They may be present in great art, but its greatness

is not due to their presence. Holman Hunt, for instance, devoted years to the accumulation of accurate detail. Yet "The Scapegoat" or "The Flight into Egypt" are great pictures almost in spite of the Eastern background of the one and the accurate costuming of the other. Holman Hunt however considered that accurate detail was necessary to clothe his ideal, and whether we find pleasure in such detail or not, whether, indeed, we consider his detail always accurate, for he saw things with a peculiar vision, we need not let this blind us to the greater qualities of his work.

I have already spoken of architecture, and of the value or otherwise of "correctness" in buildings. Similarly let us think of poetry. There is no art more incorrect to the facts of nature as regarded by science. Thus Keats in the "Ode to the Nightingale": "Haply the Queen Moon is on her Throne, clustered around by all her starry fays." As astronomy this is hopeless, as art it is great, for Keats is using nature as she was used by the mediæval artist, as material for the expression of human emotion—the emotion which he felt in a moonlight night. In "Hamlet" Polonius, when urging Laertes to set sail, says "the wind sits in the shoulder of your sail," a phrase not to be understood of a meteorologist but expressing with wonderful force the urgency of Polonius's wishes. It is this touch of emotion and of imagination which is the essence of art.

What I have tried to express to you does not mean that nature is to be despised, or that accuracy is a vice—very far from it, only that accuracy, in itself, is not an artistic virtue. It is only so in so far as it conveys and is part of the artist's vision; only that nature is not the sole motive and subject of art. It is only one motive, though a great one, amongst many. Art is concerned with all human life and will be content with nothing short of that.

This introduces us to the claim of art for art's sake, a saying which can be interpreted in various ways, for it is evident that the word "art" is used in two different meanings in the one sentence. If it means that art should be exercised from the desire for external expression of a deeply felt emotion, not for the sake of notoriety or gain, nothing could be more true. Often, however, it is taken to mean picture-painting for the sake of the observation of nature and confined to motives directly inspired by nature. Such a claim is impossible. It is too narrow, for it excludes from art all architecture, all poetry, all drama, most mediæval and classic art of any kind. It is not directly fatal to the artist, for great art may be created even in the narrowest of schools. It is absolutely fatal to the critic. He must understand and sympathise with varied styles and motives.

Another point which we may shortly consider is the so-called "limitation" of art. We are told that our materials have limitations which we must not go beyond, that certain motives are suited to architecture, others to painting, others to sculp-

ture, and that these limitations must not be over-passed. This may have some truth in it, but it is looking at art upside down. We have seen that a work of art consists essentially of an inward vision formed in the mind of the artist and formed in the materials of his craft. Can these very materials then act as limitations? Surely not, rather are they opportunities. When the architect conceives a building, his stones, his wood, his knowledge of technique rise together in his mind, moulded to the expression of his emotions. Were it not for the stone and the wood, were it not for his knowledge of how these can be used, he would be unable to form his vision at all and his art would not exist. How could the poet write without words? There are, indeed, no limitations to art save the limitations of the artist's mind; the materials, the technique and the form are all instruments to be used by him to the utmost of his capacity, and his instruments are his opportunity, not his limitations. The artist's conception of a statue is not limited by the fact that the statue is to be of bronze. The architect's conception of a palace is not limited by the fact that it is to be built of stone. It is created by these things. Did the sculptor not know the uses of bronze or the architect those of stone, they could not even begin to design a work of sculpture or of architecture.

Yet, as ordinarily used, there is some truth in the saying. If the design is conceived, as it always should be, in its material, there can be no question of limitations. The case is different when a design is conceived in some other material. If, for instance, a building were conceived as a picture or as a prominent object in some landscape, if, in fact, it were conceived as a painter would naturally conceive it, the building would probably be impossible to construct and unsatisfactory if erected. Similarly the architect usually cannot visualise his buildings in water-colour; his attempts to do so may be seen yearly on the walls of the Royal Academies, and, may I say it, they are not art. They are an attempt to realise in one material a design which was formed in another. These are extreme cases. What has given rise to the theory of the limitations of material seems to be a lesser case of the same kind. The artist sometimes does not seem to form his vision sufficiently clearly, his mind, accustomed to plaster, visualises in plaster what will be executed in wood; and the result, of course, is plaster. It may be made of wood, but emotionally and artistically it is plaster. We can all find many such examples, buildings which are drawings or statues which are made of clay, though clothed in a suit of marble. They bear witness not to the limitations of art, but to the limitations of the artist's power.

Akin to this is the distinction between decorative art and other art—presumably undecorative. All art is one, its object is the transmission of an emotional image and thereby of the feelings which created that image. Poetry and music convey

that image through the ear, for even when we read poetry we hear ourselves speak it. Architecture, sculpture and painting convey it through the eye. Such a classification is genuine, but how can we separate those arts whose appeal is made through the eye, save by the materials which they use? Painting, architecture, and sculpture are separate, because they form themselves in different materials.

Yet painting, in special, is divided into decorative painting and, again I hesitate, undecorative painting? Decorative painting, I gather, is marked by an absence of light and shade, a frequent archaism of drawing, and is, in general, an inferior article. Yet the paintings of Michael Angelo in the Sistine Chapel or the frescoes of Fra Angelico in San Marco are amongst the finest works of human genius which the world has seen. The whole of the early Italian School was decorative. The sculptures of the Parthenon were designed as decoration and can only be understood as such. Indeed, the only art which is not decorative is intellectual art, and that is not art at all. The distinction is impossible; even pictorial art does not gain by being surrounded by a gold frame and by having no connection with its surroundings. The artist's opportunities are as great on a church wall as in a studio, indeed they may be greater, and no art suffers by its opportunities, even if we disguise them as limitations.

Both in the creation and in the appreciation of all art the first essential is a clear internal vision. This is the true work of art; the appreciation of it is true criticism. This includes all material, all technique, for technique beyond the vision is mere juggling. To attain this we must study and understand not merely our own art but all art; we must not confine ourselves to the mere accumulation of material, the learning of tricks of draughtsmanship, or the collection of archaeological and scientific facts; we must train and develop our emotions. Material, technique, and knowledge are necessary; without them we shall have nothing wherewith to form our works of art, and the greater our knowledge of technique, the fuller will be the works which are formed from it. The purpose of art is not the exhibition either of manual dexterity or of knowledge, it is the expression of certain human emotions and must be judged and appreciated by the quality of its feeling. And we must remember that the artist is a man sharing in the life and work of other men. His work is no mere luxury, it is a necessary part of human life. The artist is not an alien or a hermit. He does not stand outside humanity. He is not peculiar. He is a man amongst other men, and his work has never been better expressed than it was by the Greek writer: We are here "to make gentle the life of the world."

The writer desires to acknowledge his indebtedness to Signor Benedetto Croce's "Æsthetic."

THE GENTLEMAN AND ARCHITECT.

YOU have probably been used to consider that our generation is the first to give a really philosophic study to architecture. Other and earlier ages, you think, followed consciously or unconsciously rules, traditions, or examples, but ours alone has looked with wide intelligence on the whole scheme of architectural activity, analysing, comparing, discerning; ours alone possesses the confident assurance which can say, with all the world's experience behind it: "Here is beauty and here is the way to it."

But you have forgotten the year 1755, and you have probably never heard of Mr. de Cordemoi. In 1755 from a printer's in Gray's Inn, there dawned upon London that *Essay on Architecture* in which its *True Principles are explained, and invariable Rules proposed, for directing the judgment and forming the taste of the gentleman and the architect*. Mr. de Cordemoi was not its author, he was the author's forerunner. There is in this publication no expressed (though much implicit) evidence of its French origin. It is in fact a translation (if the word translation can be applied to a mere misfit of foreign clothing) of a treatise by the "celebrated Père Laugier."* The person who decked the author's words in a semblance of the English language may himself have been an architect or a gentleman or both; but he was joyously deficient in knowledge of idiom and presumably was debarred from contact with a dictionary, limitations which add infinitely to the pleasures of his publication.

The need for the illumination which the work is to afford is set forth with simple ostentation. *We have not as yet any work which establishes in a solid manner the principles of Architecture, which manifests the true spirit of it, or which proposes rules proper to direct the talent and fix the taste . . . it is not sufficient to know how to work only, we ought to learn how to think. . . Architecture alone (of all the arts) has hitherto been abandoned to the caprice of Architects, which have given us precepts of it without discernment. The ancients, it seems, including Vitruvius, all fall short of our expectations, and all the moderns except Mr. de Cordemoi only comment upon Vitruvius and follow him in all his wanderings with confidence. I say Mr. de Cordemoi excepted: this author more profound than the greatest part of others hath discovered the truth which was hid to them.*

I was ashamed of my ignorance, and still more ashamed to show it. But heavily disguised as a candidate for the Intermediate Examination I

* There is in my copy no indication whatever of the original author's name; but a manuscript note in the Institute copy gives the information, and adds that the writer, while concealing his name in the first French edition, placed it on the title-page of the second, which synchronised with the London issue of the translation (1755).—P. W.

ventured to make inquiries at No. 9 Conduit Street on Mr. de Cordemoi and his works. Somewhat to my relief I drew blank.

The author, it seems, could not get even from Mr. de Cordemoi all that he required, but not discouraged he *fathomed the abyss*, until, as he believed, he *discovered the bottom*. He *interrogated his soul*, and *all at once*, he says, *it has given to my eyes a great light*.

So much for preface—now for the "bottom" and the "great light."

When we speak of the art of building, of the confused heaps of troublesome rubbish, of heaps of shapeless materials, dangerous scaffolds, a frightful game of machines, a multitude of ragged labourers: this is all that presents itself to the imagination of the vulgar—but all this, of course, is, as our author says, the mere rind; we have got to concern ourselves with deeper and higher mysteries.

We accordingly glance at history and are not long in discovering that after the Greeks, to whom *Architecture owes all that is perfect in it*, and certain experiments of the Romans which served to *show the whole universe that when perfection is arrived at there only remains to imitate or decay*, there followed a terrible disaster so veiled in obscurity of language that we barely recognise in it the identity of the Gothic periods. It was a *new system of Architecture wherein unskilful proportions, ornaments ridiculously connected and heaped together, presented stones as paper work, unformed, ridiculous, and superfluous. This modern architecture hath been but too long the delight of Europe. Most of our great churches are unfortunately destined to preserve the traces of it to the remotest posterity*. But better days, as we know, followed; the Renaissance dawned, though not so named by the writer. *We have had, he says, our Michael Angelos, our Bramanti, and our Vigniolis (sic). They and others like them abandoned the ridiculous geugaws of the Goths and Arabians, and substituted in their room manly and elegant appearances of the Doric, Ionic, and Corinthian.*

We seem to be getting on somewhat inconsistently, for if after Greece there was nothing left but imitation or decay it is difficult to account for the writer's bliss in the Vigniolis; but his only misgiving at this point is lest he should be despised as a mere amateur. *Don't say, he cries, that not being of their profession I cannot speak of it with sufficient knowledge. It is assuredly the most vain of difficulties. We daily judge of tragedies without having ever made verses.*

So we have an appeal to the primitive house, a sort of analysis of simple wood construction, the column, the beam, the rafter. It is a dull chapter unrelieved by the sallies of the translator save where he conveys the information that there is remaining in France a *very fine monument of the ancients, it is what they call at Nismes the square house*.

This pretty compliment on the part of the men

of Nîmes is no doubt intended to reciprocate our politeness in calling it the "maison carrée."

The author's method of holding up the pure theory of beauty is, throughout his book, to take the main features of Classic architecture one by one and expose to opprobrium the practices which he considers to be faults. He starts with columns, which he truly observes should be upright and round. *Its diminution* (which for a variety the translator calls *diminution*, a word which I have hitherto only heard in the mouths of light-and-air experts) should, he says, be from the bottom to the top, and the column should bear directly on the pavement.

The first defect is when instead of detaching the columns they hold them engaged to the wall. This is a nasty rap for the men of Nîmes and the engaged columns of their square house, but the author does not notice the inconsistency except by admitting that the shameful necessity of attached columns should only be employed discreetly and in an impossibility of doing better. The second defect is in place of round pillars to employ square pilasters. At pilasters he fairly seethes with indignation: *the pilaster is a thing I cannot bear with. This aversion was born with me (poor little baby!)—and the reason he gives is delightful. There is in them lively and commodious stops that obstruct the view; their surfaces without the roundings give a flat air to the whole order . . . we ought to look upon them as a low innovation.* Other strictures on column design follow, including an unmerited attack on flutings which is hardly consonant with the reverend writer's admiration of all things Greek. Even rustic columns are, he thinks, less vicious than the fluted. A good many modern critics will agree with his attack on the former. *The rustic columns are but a capricious imagination. It is not an entire column that one sees; they are different cut pieces of columns heaped one upon another in an unequal model.* Of twisted columns he has yet harder words to say: *they are in truth in architecture what in human bodies is called a leg broken in wrestling. Do not let us run into the counterfeit brilliant, it only proves the want of genius.* Pedestals are an abomination to him. He attributes their use to parsimony. *They would have columns there; it would have cost too much to have them of a model great enough to make them bear immediately upon the pavement, from thence arose the necessity of pedestals.*

Entablatures next come under scrutiny; he falls foul of the Roman arcade motive, thinking that it provides an unworthy support to the architrave which should be self-supporting, and he goes on to attack the entablature which "breaks" round the column or pilaster. A deep-seated objection to the Whitehall front of the Treasury buildings places me in complete sympathy with the author on this point.

Pediments he would confine altogether to the

legitimate terminations of main roofs. Other applications of these features he humorously describes as *preposterous impediments!* He allows them as covering the portal of a church, but is down on curved pediments as being *against nature*. Broken pediments are, as you would expect, *detestable . . . of all frenzies the most consummate.*

Orders one above the other he allows as being *a license that is authorised by necessity*, but to the lower orders he denies all that carries in it the representation or idea of a roof. *I do pretend that we should retrench of the inferior order all parts of the entablature that is called frise and cornish, in fact, nothing is allowed to the lower orders but the mere architrave.*

He forbids altogether the carrying of a great order through two or more stories and has no patience with attics. *Nothing is more unformed and more defective than this attic.*

It is to the translator that we owe the special horrors of the following phenomenon: *I was showed one day a lobby, fixed upon three arches, supported in the air in the form of a tail-piece. They told me, See here, what a bold piece is this.*

At last our purist's objection to anything but mere column and beam design breaks down. He admits that an edifice of detached columns which bear an entablature is not habitable. *The necessity of preserving oneself from the injuries of the air, and many other motives still more interesting (including, I suppose, decency) oblige us to fill up the spaces between the columns.* This sanction of walls leads him on to doors and windows, for which he recommends square as opposed to semicircular heads. Such heads produce spandrels—not that he calls them spandrels, having instead recourse to a circumlocution which occupies half a page. But of these spandrels, he says that *These sort of irregular spaces . . . oblige you to place therein low ornaments for which one can give no other reason than that they have been placed there to cover a defect.*

Hitherto, I quote again, *I have run through all the necessary parts of architecture and I have not met a niche in my road. What then in effect is a niche? . . . I cannot believe that good sense can be pleased with looking on a statue placed in a window cut as a hollow tower. My antipathy to niches is invincible, and till they have shown me the principle and necessity of it I shall lay violent hands upon all those who shall present them.*

I have now offered enough samples from this work of "mystery, imagination and humour" to cause a moderate run on the Institute copy, but I cannot put down my pen without assuring my readers that there is in store for them another blow to our modern self-sufficiency.

Town-planning at least is a modern movement. Not a bit of it. Dear old Cordemoi, to be sure, does not appear to have dealt in it, but the Rev. Father has a whole chapter upon the subject and upon the embellishment of gardens.

Reading beneath the veil of the translator's inventions I gather that Père Laugier has a good deal of sense in his views of urban propriety.

You will laugh, no doubt, over his aspirations for a great square pointed into many streets as a goose-foot, and there is amusement to be found in his complaint against the field-gates that at this day make the gates of Paris . . . the first object that presents itself to the entering traveller are some bad pallisades raised, some ill, some well, upon cross pieces of wood, rowling upon two old hinges and flanked with two or three heaps of dung. But below the mask of garbled English there is a genuine enthusiasm for the grand style in street schemes, and there are some really excellent rules laid down as to the proper relations of uniformity and individuality in the designing of long groups of street houses. Many of the good Abbé's longings have in his own Paris come true.

And so farewell, strange little book; farewell reverend and ambitious author; farewell nameless, shameless translator, and thank you kindly for the abounding, zealous inefficiency which decorates the very index with such cheery jewels as *Chapel Holy*, *vicious cartridges*, and *Corps of Lodgings*.

PAUL WATERHOUSE [F.].

SOME IMPORTANT CASES UNDER THE LONDON BUILDING ACTS.

THE recent successful attempt of the Practice Committee, by means of the series of Papers on "The Newer Responsibilities of Architects," to emphasise the importance of several recent legal decisions, and incidentally to curdle the blood of timid members of the profession, has incurred the criticism that there are no newer responsibilities. All that is required, it is said, is for architects to know the various branches of their work which come within the scope of the term "professional practice," and to exercise reasonable care in regard thereto. Probably the critics are technically right, but if architects have no newer responsibilities, it will be admitted by everyone that, by reason of the increased complexity of their work, their responsibilities are much greater than they were a generation ago.

While there is at present no recognised textbook dealing with the subject of professional practice as a whole, there is no lack of authoritative works dealing with the principal sub-divisions of this subject, such as the law of contracts, the building law, and the law and practice in regard to easements of light and air &c. The average practitioner, however, can hardly be expected to study each one of these several branches of his work to such an extent as to be thoroughly familiar with the case law. And yet it is impossible for him to have a proper acquaintance with several important branches of professional practice with-

out a knowledge of some of the most important cases decided by the Courts. This is particularly so in the case of the special requirements governing the erection of buildings in London. It is therefore thought that some service may be done by inviting attention in the columns of the JOURNAL to a few of the most important cases that have been decided under the London Building Acts.

Everyone who practises in London is bound to have regard to the provisions of Part VIII. of the London Building Act, 1894, in regard to party structures. But it is not sufficient to know merely the statute law in regard to the subject. There are one or two important cases, a knowledge of which is essential to a proper understanding of the requirements.

Few buildings are erected in the central districts of London in regard to which party structure notices have not to be served. On the average building site there are usually at least two party structures in respect of which notices must be served. It was for many years an uncertain question whether, in the common case of a party structure forming part of a building subject to several leasehold or other interests, it was necessary for the building owner to serve a notice on the several owners, or only on the owner in possession. For the last five or six years, however, there has been a case governing this question. The case, which may be considered to be more far reaching in its effect than any other case decided under the London Building Acts, is that of *Crosby v. Alhambra Co.* [Law Reports (1907) 1 Ch. 295]. The circumstances in this case were as follows:—The plaintiffs Crosby were the lessees for a term of over ninety years of a building adjoining the Alhambra Theatre, which building for the whole of its extent on the side next the Alhambra was in the occupation of the London County Council under a twenty-one years' lease. On the Alhambra Co. desiring to execute certain works to the party structure between the two premises, a party structure notice was served on the London County Council, but no such notice was served on the plaintiffs. They were in consequence unaware of the intention to execute the works until such were actually in progress, when they forthwith applied for and obtained an injunction pending the hearing of the case.

It was contended on behalf of the Alhambra Co. that the Act was complied with if a notice was served on the owner in possession. It was argued for the plaintiffs that it was necessary for a notice to be served on every person coming within the definition of owner. This definition as given in Section 5 (29) of the London Building Act, 1894, is as follows:—"The expression 'owner' shall apply to every person in possession or receipt either of the whole or of any part of the rents or profits of any land or tenement or in the occupation of any land or tenement otherwise than as a tenant from year to year or for any less term or as a tenant at will."

The Court decided in favour of the plaintiffs. Mr. Justice Neville stated in his judgment that all persons coming within the foregoing definition of owner must be served, with the exception that, where some interest in premises is held by several persons as tenants in common or joint tenants, service on one of such tenants will probably be sufficient.

It follows from this case that the architect acting for the building owner should most certainly advise his client that, if a party wall is affected by any proposed work, or if it is intended to build within ten feet of, and at a lower level than, an adjoining building, it is necessary to serve notices on every person having an interest in the adjoining building other than that of a tenant from year to year, or of a tenant at will. Of course the service of several notices is likely to involve the building owner in some little expense—a notice usually results in an award, and there is hardly an award made which does not contain a clause providing for the payment by the building owner of the fees of the adjoining owner's surveyor. But, in the face of this case of *Crosby v. Alhambra Co.*, an architect will be most unwise if he omits to inform his client of the obligation imposed by statute of serving notices on all adjoining owners. It is admitted that it hitherto has not been the general practice to serve party structure notices in this comparatively broadcast manner. Many people still place reliance on the service of a single notice addressed to "the owner" on the premises. But this comparatively recent case clearly shows that, if there is more than one interest in the property concerned, a person who persists in such a policy incurs the serious risk of his work being stopped by an injunction obtained by an adjoining owner who has failed to receive his statutory notice.

Another important case under Part VIII. of the London Building Act, 1894, concerns the question of compensation. A close study of this part of the Act will show that in the majority of cases the liability of a building owner who, in executing works to a party structure, has affected the premises of an adjoining owner, is limited to making good all damage. In the case of *Adams v. Marylebone Borough Council* [Law Reports (1907) 2 K.B. 822] where a party wall had been raised under section 88 of the Act, it was held by the Court of Appeal that the surveyors responsible for the award in this case had acted rightly in refusing to give compensation for loss of trade, as there was no provision for compensation in the section. The Lords Justices, however, made it clear that when works are carried out under certain provisions of the Act, compensation can be awarded for, among other things, loss of trade. These provisions are section 87, sub-section 6; section 93, sub-section 3; and section 95, sub-section 2 (b); in each of which cases it will be noted that provision for compensation is specifically made. It will

also appear from this case that the amount of the compensation can be assessed by the surveyors. Consequently, where the work executed comes within the scope of either of the three foregoing provisions, the surveyor to the adjoining owner should obtain the insertion of a clause in the award providing for the payment of compensation in respect of the work executed under such provisions, and also providing that the amount of the compensation is to be determined by the surveyors.

There is in regard to party walls a further point of very considerable importance both under Part VIII. and other provisions of the London Building Act, 1894. Is a wall which is a party wall for the lower portion of its height, a party wall throughout the whole of its height, or is it an external wall above the level at which it ceases to separate two buildings? There are two important cases which affect this point. In *Drury v. Army and Navy Auxiliary Co.* [Law Reports (1896) 2 Q.B. 271] it was held by the High Court that in the case of a "party wall" separating two divisions of a building of the warehouse class, one of which divisions was of a greater height than the other, the wall ceased to be a party wall above a height of three feet from the roof of the lower division. The inclusion of this height of three feet in the portion considered as a party wall was of course due to the fact that the building was subject to the provision requiring the carrying up of the party wall to a height of three feet above the roof. In the quite recent case of *London, Gloucestershire and North Hants Dairy Co. v. Morley and Lanceley* [Law Reports (1911) 2 K.B. 257] it was held by the High Court that a wall which separated two buildings of unequal height, and had by user become a party wall in its lower portion, ceased to be a party wall in its upper portion where it did not separate the two buildings, or come within the scope of the provision as to the carrying up of party walls above the roof.

These two cases afford food for reflection, and taken together, cannot but have considerable influence on the administration of the Building Acts, and on the general building practice in London. But it should be noted that neither of these two decisions specifically covers the most common case of all—a wall which is a party wall by reason of the fact that it stands "to a greater extent than the projection of the footings on lands of different owners."

Although there have been numerous cases decided in regard to questions of the general line of buildings in London streets, there is no case of such a nature that it warrants special mention in this article. The law on this question has not, in broad principle, been affected by any decision. Speaking in general terms, it is not permissible except with the consent of the County Council, or except when dealing with the exact site of a previously existing lawful building, to erect a

building in advance of the general line of buildings. The line is determined by the Superintending Architect, but there is the right of appeal to the Tribunal of Appeal against his decision. Cases involving most important questions have admittedly been decided, but they only concern the architect indirectly, as cases which the Superintending Architect and Tribunal of Appeal must take into consideration when determining the general line.

As regards, however, the provisions of section 13 of the 1894 Act, which control the erection of buildings within the prescribed distance, there is an important case with which every member of the profession in London should be acquainted. The case is that of *London County Council v. Patman and Fotheringham* (67 Justice of the Peace, 285) which was decided in 1903. It was held in this case that, in the re-erection of buildings within the prescribed distance, the plan of the old buildings required to be certified by the District Surveyor was a plan showing only the ground area of the site and building. The importance of this decision lies in the fact that, as the certified plan which governs the erection of the new buildings has been held to be a ground plan only, the height of the new buildings is not limited by the height of the old buildings but is subject only to the general provisions of the Act. This case should be distinguished from that of *Paynter v. Watson* [Law Reports (1898) 2 Q.B. 31] decided under section 43 of the 1894 Act, where it was held that the plans required under such section, which is one of those dealing with open space about buildings, must be plans and sections showing the whole extent of the building.

Throughout the first portion of the 1894 Building Act there are several sections which contain special requirements in regard to "dwelling houses to be inhabited or adapted to be inhabited by persons of the working class." It is important, therefore, to know what is meant by the term "working class." Much may be learnt on this point from a study of two important cases, *L.C.C. v. Davis* (77 Law Times Reports, 693) and *Crow v. Davis* (89 Law Times Reports, 407; and 91 Law Times Reports, 88). It will be seen from these cases that the term working class is not to be considered as applying indiscriminately to persons earning their living by manual labour, but as used in the Building Act, applies only to persons who, in the words of Mr. Justice Channell in the first of these two cases, "ordinarily live in such a state and condition of life that overcrowding is likely to take place."

The number and size of the advertisement signs in London streets seem perpetually on the increase, and it is not infrequently said that the Council are to blame for allowing so many signs to be erected. Few persons apparently are aware how very slight

is the jurisdiction of the County Council in regard to such structures. There are quite a string of decided cases bearing on this subject. In *Coburg Hotel v. L.C.C.* (81 Law Times Reports, 450) it was held that an iron shelter projecting from a building, and fixed to the building in such a way as to become part of it, could not be erected without the consent of the County Council. The structure in this case was, of course, of a much more substantial character than an ordinary sign, and there is no question as to the effectiveness of the Council's control in regard to structures of this kind. But as regards ordinary signs fixed to a building in such a way as not to form part of it, but to be in the nature of excrescences, it would appear that the Council have no power in regard to such structures under sections 22 and 73 of the 1894 Act. The Council have unsuccessfully contested three successive cases in regard to structures of this kind. These cases are *Hull v. L.C.C.* [Law Reports (1901) 1 K.B. 580], *L.C.C. v. Illuminated Advertisements Co.* [Law Reports (1904) 2 K.B. 886], and *L.C.C. v. Schewzik* [Law Reports (1905) 2 K.B. 695]. The only way in which ordinary small signs can apparently be dealt with under the present law is by means of by-laws made by the Council under section 164 of the 1894 Act, and administered by the several Borough Councils and the Westminster City Council. But no such by-laws have been made. For an understanding of what degree of fixity, &c. will render a structure a part of a building, reference must be made to the actual law reports of the foregoing cases. It will be helpful in this connection to read also the reports of *L.C.C. v. Hancock and James* [Law Reports (1907) 2 K.B. 45] and *Rex v. Denman and L.C.C.* (96 Law Times Reports, 672), in the latter of which two cases the High Court upheld the decision of a magistrate who had made an order for the removal of a large advertisement structure.

All this is probably very dull reading. It is impossible to treat a subject of this kind in an interesting manner. Also no claim is made for any originality. All the cases mentioned have of course been referred to elsewhere; many of them are reported in that excellent publication of Messrs. Arthur Crow and A. F. Jenkin—the *Architects' Law Reports*. But although most persons practising in London will accept the proposition that at least the existence of these cases should be within their knowledge, they will hardly devote their leisure moments to wading through the ordinary law reports. It is hoped, therefore, that a selection of the most important reports thus presented in tabloid form, and skilfully intermixed—this is a hint to the Editor—with other more interesting material, may receive a little attention from the London readers of the JOURNAL.

HORACE CUBITT [A.].

REVIEWS.

M. HÉBRARD'S RESTORATION OF THE PALACE OF DIOCLETIAN.

Spalato. Le Palais de Dioclétien. Relevés et Restaurations par Ernest Hébrard. Texte par Jacques Zeiller. Preface par Charles Diehl et Appendice par Gustave Jéquier. Po. Paris 1912. (Ch. Massin, 51 rue des Ecoles, Paris.)

A copy of this work has just been presented to the Library of the Institute by M. Ernest Hébrard. M. Hébrard carried off the Grand Prix de Rome in 1904, and selected for his final "Envoi" the Palace of Diocletian at Spalato. The drawings illustrating the volume were exhibited in 1910, when the "Médaille d'honneur" of the Salon was accorded to their author. They formed also, last year, one of the most important contributions to the Exhibition in Rome during the International Congress, and were accompanied by a large model, of which photographs are given in the volume.

With the exception of a folio volume by an Austrian architect, Prof. G. Niemann, published two years ago, this work of M. Hébrard's is the first complete survey of the Palace since Robert Adam brought out his well-known work in 1764. In order to assist him in his task, Adam secured the services of a French architect, Clérissieu, Grand Prix of 1746, and of two draughtsmen; but for various causes he was only able to spend five weeks in Spalato. On the other hand, M. Hébrard paid no fewer than seven visits between 1908 and 1910, in some cases of two months each, so that he was able to pursue his investigations much farther than Adam. Some idea of the magnitude of his task may be judged from the plan given by Hébrard of the "Etat actuel," Plate III., from which it will be seen that, with the exception of the entrance vestibule, the outer wall of the greater part of the crypto-porticus and a fragment at the south-west corner of the Palace of what are supposed to have been the baths, nothing remained above ground of the residential portion of the Palace. Fortunately it happened that the whole of the basement story of the original Palace had been vaulted, and the greater part of the walls carrying these vaults and the vaults themselves still remained *in situ*. The difficulties which had to be encountered in order to get access to and measure them were very great; in one or two cases the basement had been utilised as cellars for the shops or houses above, but in the greater number portions were filled with bones, having been used as ossuaries; others had become drains, and in many cases the basement was filled with rubbish of every kind, rising sometimes up to the vault. Robert Adam in the five weeks he spent there was quite unable to pursue these investigations,* and, with the exception of a small

portion of the basement at the north-west end of the Palace, all his measurements were confined to the walls and other buildings of whole structure still existing above ground. His conjectural restoration of the Palace proper, therefore, is purely imaginary, and when compared with M. Hébrard's it will be seen that the great halls and reception rooms are not in accordance with the walls in the basement as set forth in M. Hébrard's measurements.

The first chapter introducing the subject, the text of which is written by M. Zeiller, refers to all the authors who have written accounts of Spalato from the earliest times to the present day, the most important being that of Robert Adam, from whose work some reproductions are made in the text.

Chapters II. and III. deal with the walls, the entrance gates, and the whole of the northern half of the town. The illustrations do not differ materially from Adam's work, except that in the century and a half which has passed since his visit some of the architectural features have disappeared; in the Golden Gateway, for instance, the shafts carrying the decorative arcade above the doorway are missing. In the account, however, of the gateways a description is given, with illustrations, of the changes made in them in later times about which little is said in Adam's work. In the main street leading from the Golden or North Gate to the cross street between the two other gates (east and west) M. Hébrard introduces columns instead of piers, which correspond better with the usual colonnaded streets of Roman architecture. With the exception of one or two piers or fragments of wall nothing remains of the blocks on either side of this street; in one of these M. Hébrard puts the quarters of the Imperial Guard, and in the other the stables, bakeries, and other dependencies. To a certain extent the same destruction has taken place in the two courts beyond the main cross street, but, fortunately, the central street leading to the Palace, the Temple of Jupiter in the west court, and the Mausoleum of Diocletian in the east court are fairly well preserved, so that the conjectural restorations by M. Hébrard are virtually the same as those given in Adam's work. The temple in the west court used to be called the Temple of Æsculapius, but is now recognised as a Temple of Jupiter, and, having been converted into a baptistery, is, with the exception of its portico, in perfect preservation, and M. Hébrard's photographs of the interior (p. 105) showing the coffered burial vault, and of the exterior (p. 107) showing the segmental vault, are of great value.† With the

panied Adam, in which the baths at the west end are shown. This is enclosed in an outline on which is written "Partie souterraine." This is more exact than Adam's drawing, and corresponds better with M. Hébrard's researches.

† M. Hébrard in the model, and also in the magnificent bird's-eye view of the whole Palace (Plate II.), shows a tile

* In proof of this there is an interesting drawing on page 17 of M. Hébrard's work, by Clérissieu, who accom-

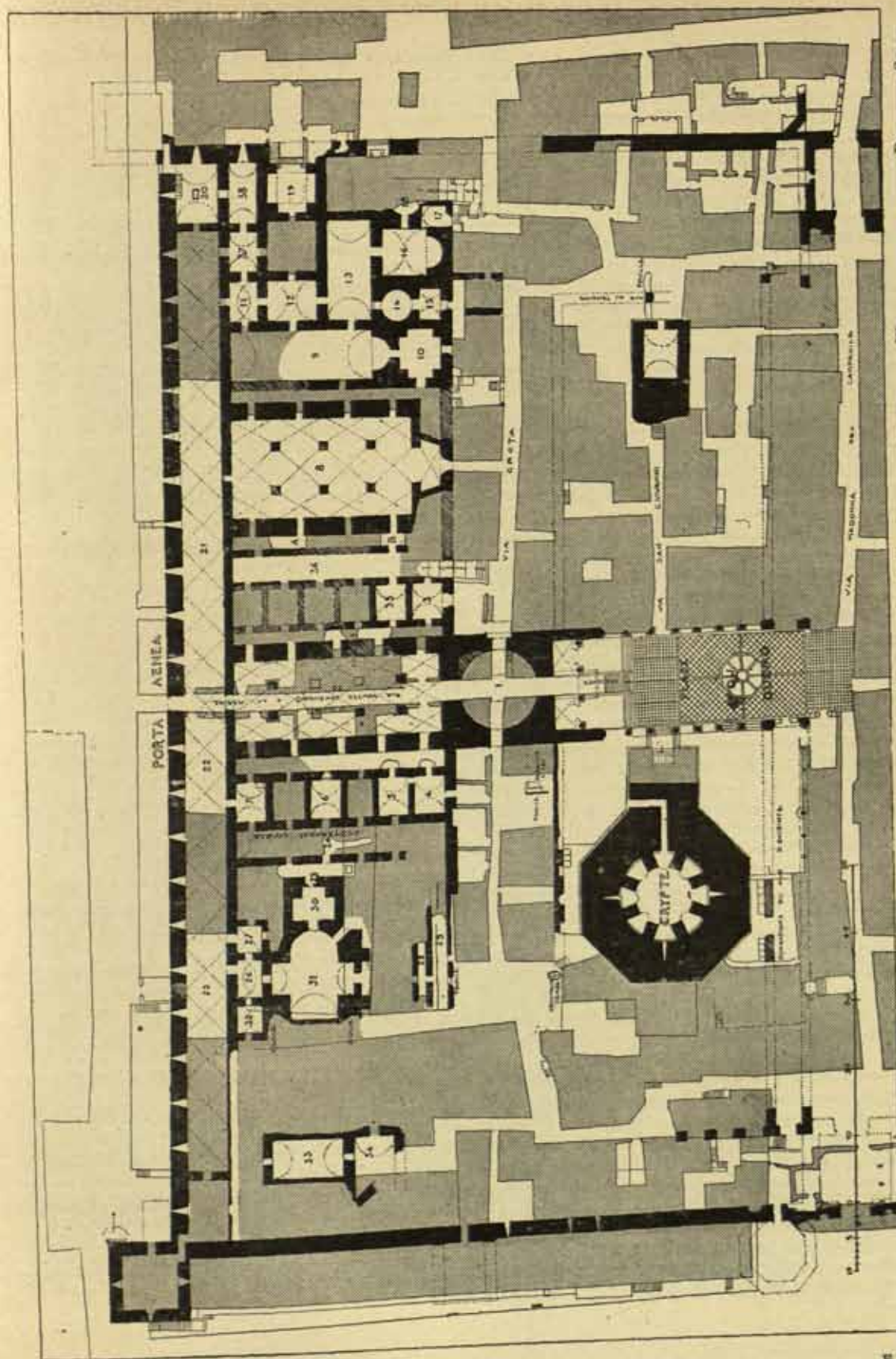
exception of the Pantheon and the Temple of Ceres and Proserpine in Rome, this is the only Roman vaulted temple of which the vault is preserved; of the Temple of Neptune in Rome only a part of one side of the vault remains, and of the Baths of Diana at Nîmes part of the vault. In his conjectural restoration of the roof on the portico of the Mausoleum of Diocletian, now the Duomo of Spalato, M. Hébrard is not so happy. Both M. Hébrard and Professor Niemann would seem to have assumed that the whole portico was covered with a pent-roof of tiles. The absence of any projecting string-course above this roof to throw off the rain streaming down the walls proves almost to a certainty that this pent-roof was no part of the original design, and in this respect both Adam and Cassas, who show a flat roof with a blocking course or *cheneau* above the cornice, are more correct. In the west front of the mausoleum there was originally a portico consisting of two rows of columns, four in each row; this was destroyed when the Great Campanile was built in the thirteenth century. There is clear evidence of its existence, however, and in this respect the plans of Adam, Cassas, Hébrard and Niemann agree, but its relation to the portico round the mausoleum is speculative. On page 78 M. Hébrard gives a section showing the cornice of the central body of this portico (the actual remains are shown in Plate XI. of the "Porte du Mausolée"), and above this he conjectures a segmental barrel vault, for which there is no evidence. If he had contented himself with a horizontal stone roof, the height would not have exceeded that of the blocking course shown in Adam. As it is, he is obliged to raise a small attic story to mask the roof as shown on page 72. This has led to a complicated arrangement which will be best understood by referring to Plate XII. It is true that M. Hébrard has done his best to avoid interfering with the semicircular window which lighted the interior of the mausoleum, and of which there is a good drawing (Plate XLVIII.) in Cassas.* It is possible that M. Hébrard was misled by the conjectural restoration of Prof. Niemann, who calmly introduces a pediment over the whole portico and blocks up the semicircular window, the only source by which the interior was lighted. The architect of the Palace is not likely to have provided a window and then blocked it up with a pediment. This pentile roof had already gone in Adam's time, as may be seen from his drawings; the evidence of its existence is only known by the sinkings in the wall to receive the timbers, and it is quite possible

that it only dated from the thirteenth century when the Campanile was built.

Coming now to the Palace proper containing the habitation of the Emperor and his suite, the state reception-rooms, dining-rooms, guest-rooms, baths, &c., which covered an area of about 80,000 square feet, it is necessary first to explain that the level of the ground on the south side was considerably lower than that of the town, so that under the whole of the Palace proper there was a basement varying from 20 to 23 feet, floor to floor; part of this height was obtained by a flight of seven steps (measuring about 4.6) up to the vestibule. It has already been pointed out that with this exception of the vestibule, the south wall of the crypto-porticus, and a fragment of the bath, nothing remains of the Palace above ground, so that M. Hébrard's conjectural restoration of the Palace (Plate VI.) is based on the lines of the basement walls below. M. Hébrard in his plan of "l'état actuel," Plate III., has indicated in black all the walls existing above ground, and in outline the walls existing and measured of the basement story, so that comparing this plan with the restored plan, one is able to judge how closely he has adhered to the actual facts as discovered in his minute researches. Roughly speaking, he would seem to have been able to recover about three-quarters of the whole of the basement plan. The most complete account of the researches made is given by M. Zeiller in Chapter IV., with plans and sections by M. Hébrard in the text, so that one is able to follow to the fullest the results set forth. For the conjectural restoration of the principal floor M. Hébrard has had to trust to his intimate acquaintance with the architecture of Diocletian's time, as also with that which preceded it. And in this respect he has been able to avail himself of the magnificent series of restorations of Roman architecture by the Grand Prix students, by Blouet on the Thermæ of Caracalla, Deglane on the Palaces of the Palatine, and by Paulin on the Thermæ of Diocletian, to mention only the more remarkable of the series. By far the most interesting portion of M. Hébrard's discoveries is to be found in the narrow courts by which the basement story and that of the floors above were lighted. These courts, as will be seen on the restored plan (Plate VI.), run between the crypto-porticus or long alley on the south and various offices on the north side. As already stated, all the rooms in the basement were vaulted, but M. Hébrard noticed that in the narrow alleys or passages some of the walls rose up to the level of the principal floor, without any indication of a vault; he concluded therefore that these walls were the external walls of courts, and this conclusion was confirmed by the existence of windows which derive their light from these courts. This is virtually a new discovery, for although in the Thermæ of Caracalla and Diocletian it has been known that there were internal courts,

roof over the stone vault, but the side elevation on pages 99 and 107 suggests that there was no space left for such a covering. It may however have been protected by sheets of lead or copper.

* *Voyage pittoresque et historique de l'Istrie et de la Dalmatie*, par L. F. Cassas & J. Lavallée.



THE PALACE OF DIOCLETIAN: M. HERRARD'S PLAN SHOWING IN BLACK THE WALLS EXISTING ABOVE GROUND, AND IN OUTLINE THE WALLS EXISTING OF THE BASEMENT STORY.

these were generally nearly square on plan, but two of the courts in M. Hébrard's plan are 106 feet long by about 8-10 feet in width only; the walls being about 60 feet high from the basement to cornice. Such courts would not probably now be passed by the London County Council, but as they ran from north to south the sun at its meridian would at all events once a day penetrate to the bottom. These courts are well shown in the section Plate XVI., and the fullest confirmation of their existence is to be found in Prof. Niemann's drawings. The two architects worked independently, Prof. Niemann from 1904-1907 and M. Hébrard from 1906-1910, but they arrived at the same results, as may be seen by comparison of their plans. A second revelation is to be found in a series of chambers on either side of the tablinum or central hall to which the name of "Ospitali" is given by M. Hébrard. Separated from the cellars under the tablinum by a narrow court on either side, he found a series of six rooms or vaults, each with its window and entered from a side passage; the rooms above these on two floors, twenty-four in number, M. Hébrard considers were the guest-rooms. The rooms measured 20 feet by 16 feet, larger than any of the bedrooms in Pompeii, and moreover each had its window, which was not the case there. In the section Plate XVI. is shown the way in which light was admitted to the larger halls over those of lesser height (a system known to us by Blouet's *Thermae of Caracalla*), and also from the peristyles. The decoration of the walls and vaults shown in this section is of great beauty and possibly would have surprised Diocletian himself, as the Roman artists in the provinces were not equal to those who were employed in Rome; but it is based on the paintings found in Rome and Pompeii, and, for the vaults and ceilings, on those of Hadrian's Villa at Tivoli and numerous tombs in Rome.

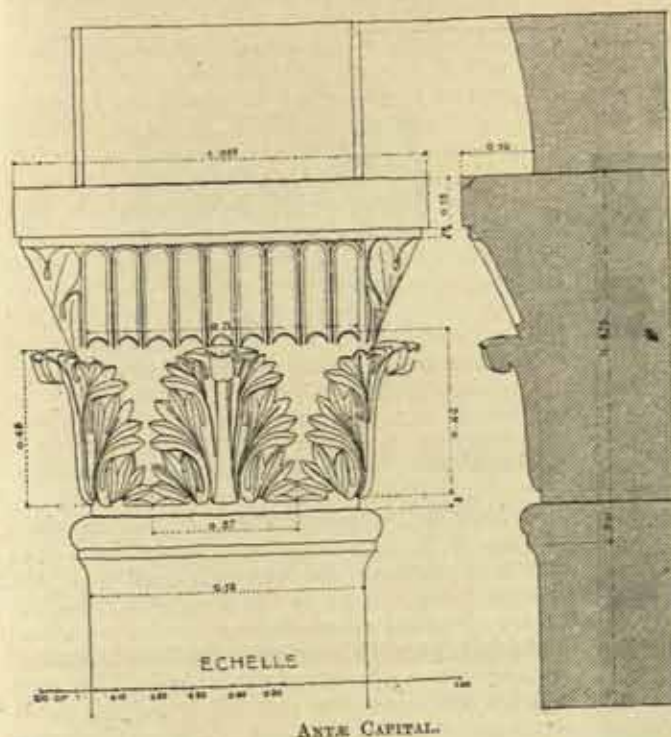
So far as the conjectural restoration is concerned M. Hébrard's drawings speak for themselves without any further description; they are all in accordance with the magnificent series of restorations which have emanated from the brilliant researches of Grand Prix students, and the recognition of their value by the award of the "Médaille d'honneur" of the Salon of 1910 to M. Hébrard must have given him the greatest satisfaction and compensated him for the years he has devoted to their delineation and the arduous work involved in the measurement of the various buildings.

So far M. Hébrard's drawings and M. Zeiller's description only have been dealt with, but the work just published goes farther than this: the Palace of Diocletian at Spalato has always been the theme of much speculation as to the source from which the characteristic features were derived. To the purist it has always been regarded as a debased example of Roman architecture; but its

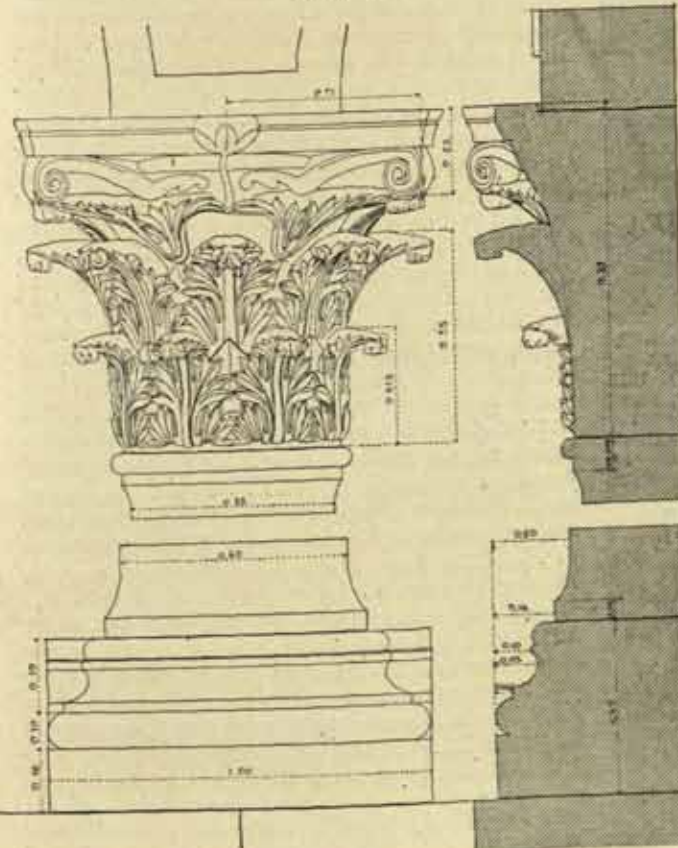
decadence formed a period of transition to Byzantine architecture on the one side and Lombard architecture on the other. It is natural therefore that a profound scholar like M. Zeiller and a skilled archaeologist like M. Hébrard should take cognizance of this; consequently the seventh chapter is devoted to "The Palace of Diocletian in the History of Art, the influences to which it was subjected and those which it exercised on later styles." It has long been recognised that in its architectural details there are peculiar characteristics which are not found in Rome, and this has been ascribed to the natural decadence of a style when developed so far from the architectural centre. The two most important deviations from Roman customs, are—(A) the arch spanning the central intercolumniation of the vestibule of the Palace, and (B) the mouldings and decoration of the relieving arch over the doorway of the Golden Gateway, whereas in Rome, though recognised as a constructional feature, the relieving arch was kept flush with the wall. (A) The Marquis de Vogüé's work on Central Syria, published in the 'sixties, showed that in the Roman archway at Damascus (Plate 2), the date of which is not known, an arch spanned the central intercolumniation, and that in the Prætorium of Mousmieh there was a similar feature. Since then other examples have been discovered at Atil, where there are two temples with arches in the centre of the portico, built by Antoninus Pius in 151 A.D., the date being given in an inscription on the base of one of the columns. Other examples of smaller dimensions are found in the niches on either side of the entrance doorway of the Prætorium at Mousmieh and of the Basilica at Chagga (Plate 15, de Vogüé). It follows therefore that it was an oriental feature dating at least a century and a half earlier than the example at Spalato. (B) The mouldings and decoration of the relieving arch over a doorway are found in a synagogue ascribed to the second century at Kefr Birim, twenty-four miles east of Jean d'Acre in Syria.* Similar mouldings exist round a relieving arch of the Medina Gateway at Antioch, illustrated in the *Voyage Pittoresque de la Syrie, Phénicie, Palestine et Basse Egypte*, par L. F. Cassas, Plate VI., Vol. I. Three other instances of the arch spanning an intercolumniation exist on the south front of the Palace, and are shown in Plate VII. in M. Hébrard's work.

Other examples of Oriental influence are shown in the photograph of the pilaster capital of the Temple of Jupiter, Plate XV., and in M. Hébrard's drawings in the text, pages 62, 65, 83, and 85, all of which suggest the work of Greek artists and are quite different in style from the representations in Adam's work; on pages 151-153 are illustrations

* See fig. 237, Anderson and Spiers' *Architecture of Greece and Rome*.



ANTÆ CAPITAL.



Echelle

CAPITAL AND BASE OF PERISTYLE COLUMN

of mason's marks from various parts of the Palace, which are Greek characters. All this evidence has led to the conclusion put forward by Professor Strykowski in *Orient oder Rome*, that Diocletian imported workmen from the Palace at Antioch, which, commenced by Gallien, was completed by Diocletian, to carry out at all events the decorative portion of his Palace at Spalato, though Strykowski maintains that the plan of the whole Palace was based on Antioch.* On page 161 M. Zeiller refers to the construction of the cupola of the mausoleum of which a drawing is given on page 89; this he considers to be oriental in its execution. In this he may be correct, but he is slightly in error when he states that the dome of the Pantheon in Rome was built on centering. According to M. Chedanne, up to the level of the fourth range of coffers the vault was built in horizontal courses; above that, where the diameter was reduced to 80 feet, centering was probably employed to build the arches, in which respect it corresponds to the range of arches in the cupola of the mausoleum. The destruction of the greater part of the Palace within the walls had led M. Zeiller to add a chapter on the history of the Palace which is of the greatest interest and value.

In conclusion, whilst congratulating M. Hébrard on the very fine series of drawings he has made illustrating the remains of the Palace, and M. Zeiller on his very clear and admirable text, the presentation of the volume which M. Hébrard has just made should be of great value to those students who, having been fortunate in carrying off the Travelling Studentships of the New British School at Rome, desire to devote a portion of their two years to the serious study of some one building or group of buildings. New discoveries are constantly being made, so that it is not necessary to go again over the ground which has already been traversed by Grand Prix students; and, although the period of their studentship is less than that of their French confrères, they might be reminded that Robert Adam, with the assistance of Clérissieu and two draughtsmen, man-

* The drawings in Cassas' *Syrie* (Plates VII. and X., Vol. I.) bear a strong resemblance to those of the Palace of Diocletian at Spalato, but they are of later date, the walls there shown being, according to Procopius, part of the fortifications built by Justinian in the sixth century.

aged to make a survey in five weeks at Spalato, resulting in the volume he published in 1764, and that in the New British School at Rome they will not only have the advice of other artists and



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archæologists, but studios in which they can set out the results of all their measurements instead of attempting the work in the bedroom of an hotel as hitherto.

R. PHENÉ SPIERS, F.S.A. [F.].

Books Received.

- An Account of Mediæval Figure-Sculpture in England. With 865 Photographs. By Edward S. Prior, M.A., F.S.A. [F.], Slade Professor of Fine Art in the University of Cambridge; and Arthur Gardner, M.A., F.S.A. 40. Cantab. 1912. Three guineas net. [Cambridge University Press, Fetter Lane, E.C.]
- A Short Critical History of Architecture. By H. Heathcote Statham [F.], Author of "Modern Architecture," &c. 80. Lond. 1912. 10s. net. [B. T. Batsford, 94 High Holborn, W.C.]
- English and Welsh Cathedrals. By Thomas Dinham Atkinson, Architect. With 20 illustrations in colour by Walter Dexter, R.B.A., 20 in monotone, and 48 plans. 80. Lond. 1912. 10s. 6d. net. [Methuen & Co., 36 Essex Street, W.C.]
- The Cheap Cottage and Small House: A Manual of Economical Building. By J. Gordon Allen [A.]. With over 100 illustrations. 2nd ed. 1s. 80. Letchworth, 1912. 1s. 6d. and 2s. 6d. [Garden City Press Limited, Letchworth.]
- Portfolio of Measured Drawings, issued by the School of Architecture in connection with the Victoria University, the Municipal School of Technology, and the Municipal School of Art, Manchester. Part I. The Hall i' th' Wood, Bolton. Fo. Manchester, 1912. [Municipal School of Art, Manchester.]
- Nothing Gained by Overcrowding: How the Garden City Type of Development may Benefit both Owner and Occupier. By Raymond Unwin [F.]. Sm. 4s. Price 3d. [Garden Cities and Town Planning Association, 3 Gray's Inn Place, W.C.]



9 CONDUIT STREET, LONDON, W., 9th November 1912.

CHRONICLE.

The Opening General Meeting: The Drummond Stewart Collection of Drawings.

A large and representative body of members and many distinguished guests assembled at the Institute at the First General Meeting of the Session to do honour to the President, who was taking the Chair that evening for the first time since his accession to the Presidential office. Among the company on the front benches were the Earl of Plymouth, P.C. [Hon. A.], Sir Aston Webb, C.B., C.V.O., R.A. [F.], Sir Thomas Brock, K.C.B., R.A. [Hon. A.], Sir Ernest George, A.R.A. [F.], Sir Alfred East, A.R.A. [Hon. A.], Sir Henry Miers, Principal of the University of London; Col. Sir Herbert Jekyll, K.C.M.G.; Sir Henry Howorth, K.C.I.E., D.C.L., F.R.S.; Dr. Unwin, F.R.S. [H.A.], President of the Institution of Civil Engineers; the Hon. E. G. Strutt, President of the Surveyors' Institution; Mr. Lionel Earle, C.B., C.M.G., Secretary to the Office of Works; Mr. L. A. Selby Bigge, C.B., Permanent Secretary of the Board of Education; Mr. E. K. Chambers, of the Board of Education; Mr. Ernest Newton, A.R.A. [F.], and Mr. Basil Champneys, the current year's Royal Gold Medallist. Most of those named had been guests of the Council at dinner that evening. On the walls of the Meeting-room were exhibited a series of old Italian and French architectural drawings and designs by G. P. Panini, G. G. and F. G. Bibiena, Pietro Righini, G. M. Oppenord, Hubert Robert, Vincenzo Rê, Cornelius Schut, J. N. Servandoni, Mauro Tesi, Charles Le Brun, Nicolas Poussin, J. C. de La Fosse, Puget, and others. These masterly old drawings, set off to advantage in broad white mounts specially prepared for the occasion, made an exceedingly effective display and attracted a good deal of attention. Some of them had been brought to the notice of members in Mr. Harrison Townsend's Paper read last Session [JOURNAL, 27th April 1912], and several appear among the illustrations in the President's new book, *Architectural Drawing and Draughtsmen*. The drawings, which number altogether 119 sheets, came into the possession of the

Institute over seventy-four years ago, having been presented by Sir James Drummond Stewart through Sir Charles Barry. A passage from the letter which accompanied the gift was read by the President and will be found printed with his remarks on the subject at the conclusion of the speeches on the vote of thanks, p. 10. The President's Address, which occupied nearly three-quarters of an hour in delivery, met with the manifest approval of the Meeting; there was long-continued applause at the close, and the vote of thanks was passed with enthusiasm.

Reinstatement of Member.

The Council have reinstated as an Associate of the Royal Institute Mr. JOHN EDWARD DIXON SPAIN, of 19 Hanover Square, W.

Designs of Public Buildings; Regent Street Quadrant.

In the House of Commons recently, Mr. King asked the Prime Minister whether his attention had been called to the criticism usually directed to designs accepted and plans adopted for public buildings and other undertakings by His Majesty's Office of Works; and whether, in order to give public confidence in the work of that department and to ensure the best value, taste, and style in all future public works, he was prepared to introduce some method of securing the best possible advice and general approval, either by appointing a representative consultative committee or otherwise. The Prime Minister, in reply, said that the First Commissioner was responsible for the designs of all public buildings, the erection of which devolved upon his department, and he was satisfied that, so far as ordinary buildings were concerned, no useful purpose would be served by the appointment of a consultative committee such as that suggested. The First Commissioner felt that he could rely with confidence upon the experience of his trained staff. In the case of exceptional buildings, such as the War Office and the new Public Offices, it had been the practice to seek the assistance of architects of eminence outside the department.

Mr. Fell asked the representative of the First Commissioner of Works if he would state what are the questions submitted to the Committee appointed to consider the proposed rebuilding of Regent Street and the Quadrant; and if it was made a condition of the rebuilding that the height of buildings to be erected shall not exceed that of the present structures, so that the sunshine and light and air of the street shall not be interfered with. Mr. Benn said the terms of reference were as follows:—"To consider the design to be adopted for completing the rebuilding of the Quadrant, Regent Street, due regard being had to aesthetic considerations, commercial requirements, and the interests of the land revenues of the Crown." The point raised in the last part of the question would no doubt be considered by the Committee.

Heating and Ventilation Experiments at Cambridge.

The Rev. John B. Lock, Fellow and Bursar of Gonville and Caius College, Cambridge, to whom the Institute is indebted for a valuable Paper from the layman's point of view on the Planning of Collegiate Buildings [*JOURNAL R.I.B.A.*, 21st May 1904], had an interesting letter in *The Times* last week describing some experiments in heating and ventilation carried out in buildings at the University of Cambridge.

Various systems of ventilation have been tried (he says)—plenum systems, vacuum systems, and plenum and vacuum combined—with the result that it seems clear that a crowded room should not depend on the heat of the air sent into it for its warmth, but that the fresh air supplied for breathing should be cooler than the air in the room and that the room itself should be warmed by other means.

Our large examination hall (106 feet long by 51 feet wide) seats about 1,000 persons (there is only one small gallery, which may be left out of account). Radiators heated by hot water are placed in the hall near the walls at the floor level. Fresh air is introduced into the hall by an inlet fan through two rows of gratings placed all along the two longer sides of the hall at the height of 8 feet or 9 feet above floor-level. In the ceiling along the central line are seven large openings through which air is drawn out of the hall by an outlet fan. The fresh air sent into the hall can be sent direct from the outer air, or it can be passed through a heating chamber containing coils of hot-water pipes. Thus fresh air of any desired temperature down to that of the outer air can be pumped into the hall, and by means of the radiators in the hall the temperature of the hall itself can be maintained at any desired level.

The result of two years' observation seems to have established the fact that the cooler the fresh air sent in the pleasanter is the atmosphere of the hall, and that when the hall is full it is difficult to send in air cool enough, even when the outside temperature is as low as 40 degrees. Arrangements, however, are being considered by which it will be possible to cool the incoming air by passing it over ice. What happens seems to be this: The air on the floor of the hall up to the height of the necks of the occupants has little movement and remains warm and practically unchanged, while the cold air coming in with a steady and almost imperceptible flow on both sides of the hall at the height of 9 feet spreads itself over the hall, and, being relatively heavier than the warmer air in the room, slowly falls to the level of the faces of the audience. It is then breathed, and being thereby made warmer, and therefore lighter than before, it rises up through the heavy incoming air, and is drawn away through the outlets in the ceiling. The result is that while the bodies of the occupants of the room remain comfortably warm the air they breathe is cool and fresh and the feeling of oppression so common in rooms warmed by hot air is altogether absent.

The ventilation of the second examination hall has recently been rearranged on these lines with similar results. In this case no provision has been made for warming the incoming air, nor is it now intended to make such provision, but it is proposed to put trays for the reception of ice in the place of electric heaters, which at first it was thought might be necessary.

There is one other small point. One of our laboratories is warmed by fresh air, which is heated by being passed over pipes heated by steam; others are similarly supplied with fresh air warmed by hot-water pipes. In the first case the oppression and discomfort

is such that some of our professors have stopped up the ducts by which the warm air is supplied, preferring to work in the cold without the warmed fresh air. This discomfort is not so noticeable when the air is passed over hot-water pipes at a much lower temperature than that of steam. In fact, the passing of air over hot pipes, especially if the pipes are of the temperature of steam, seems to render it unpalatable.

These results seem to suggest that the main reason why the atmosphere of the House of Commons is so relaxing is that the pure air which is so liberally passed through the room is supplied at too high a temperature, and that matters are aggravated by the air having been warmed by being passed over pipes at the temperature of steam. In fact, although the air is doubtless pure, it seems not to be fresh, but has been cooked and has lost its invigorating qualities. If cold air is to be supplied, it is obvious that it must not be delivered through gratings in the floor, but through a multitude of small gratings at a suitable height in the walls.

Lectures on Concrete.

A course of six Educational Lectures on "Concrete: its Properties and Manufacture" is to be given by Mr. H. Kempton Dyson, Secretary of the Concrete Institute, at 5.30 P.M. on Tuesdays, 12th, 19th, and 26th November, and 3rd, 10th, and 17th December 1912. The Lectures, which will be delivered in the Lecture Hall of the Concrete Institute at Denison House, 296 Vauxhall Bridge Road, Westminster (close to Victoria Station), will be of about an hour's duration, and illustrated by diagrams, photographs, specimens, and apparatus. Admission will be free by ticket obtainable from the Secretary of the Concrete Institute.

THE USE OF ENGLISH TIMBER.

A Conference was held on the 20th February last, at the Surveyors' Institution, between the representatives of the English Forestry Association and the delegates of the R.I.B.A. who had been appointed by the Council of that body, viz.—Messrs. Max Clarke, Ernest Flint, A. E. Munby, and W. Wonnacott. Lord Clinton was in the Chair, and was supported by Lord Hastings, Col. Mostyn, S. H. Cowper Coles, Arthur Arnold, and Mr. C. Duchesne, Hon. Sec. of the Association.

In the course of his introductory remarks, Lord Clinton commented on the poor demand for English timber, especially for constructional work, in spite of the fact that all authorities agreed that for tensile strength, durability, and other good qualities, much of the English timber was unequalled, and this especially referred to English oak. For such purposes as panelling English oak was certainly the most valuable, as could be judged from examples to be seen in existing houses. It was impossible for him to refer to all the English timbers, but in nearly every instance they compared very favourably with foreign varieties. There was a great deal of misapprehension as to the quality and sizes of English timber available, and it was part of their policy to remove these misappre-

hensions, so that English timber might at least receive fair treatment. Many of the existing conditions which operated against a more extended use of English timber could be remedied, and it was also part of their policy to assist architects and consumers in obtaining proper supplies of English timber of the quality and sizes that they required. He hoped in the future that they would be able to obtain these supplies much more readily than had been the case in the past. The Association was in touch with timber growers all over the country, and they knew that large supplies of timber did exist, and he would value the opinion of the architects present as to how these supplies could be made more remunerative to the producer and more satisfactory to the architect and consumer of timber. He was certain that architects would be in sympathy with these proposals and he appealed to them for their hearty co-operation.

Mr. M. C. Duchesne, Hon. Secretary of the English Forestry Association, spoke of the supplies of English oak, native Scotch fir, larch, elm and other English timbers, and enumerated the special benefits that timber grown in this country possessed, in comparison with foreign varieties. He enumerated several instances to illustrate these points and mentioned the case of an owner within forty miles of London who was felling 1,000 fine oak trees per annum for several years to come. These trees should be worth a high price for such purposes as panelling &c., but owing to the poor demand for English oak the timber was being used for purposes comparatively inferior, and naturally realised a price far below its proper intrinsic value. Native Scotch fir was another case in point, and of which large supplies of good quality existed. It was quite incorrect to suggest that good native Scotch fir timber could not be obtained or that it was inferior to the imported timber. In fact all authorities agreed that for durability and tensile strength the native timber was superior to the foreign. English timber received scarcely fair treatment at the hands of some of the timber trade, and he feared that those interested in the foreign timber trade often drew very unfair comparisons between English and imported timber and in some instances showed very inferior examples of English timber to compare with the foreign timber which they wished to push. The conversion and seasoning of English timber were points that would receive much more attention in the future with a view of remedying some of the objections that were raised, and he was certain many of these difficulties could be surmounted. The Association was obtaining information as to supplies of timber, and as it would be advisable not to attempt to move too fast at first they would value the views of those present as to the best methods of taking the initial steps.

Mr. Ernest Flint was of opinion that in order to enable timber growers to compete with the

foreign produce, more regard should be paid to the time and manner of felling and preparing the timber and of putting it on the market. With the modern advances in tanning processes one could now disregard the value of the oak bark as this had fallen tremendously. This formerly led to the practice of felling in the spring when the tree was full of sap and the bark could therefore be more easily removed, whereas timber cut in the autumn afforded better stuff for building purposes and was more easily and better seasoned.

Mr. Flint asked to see a specimen of say *Pinus sylvestris* grown at home, as a sample of what could be produced and which was sought to be placed on the market; that imported from abroad has been too quickly grown, is too open in the grain, and not suitable for joiners' work. Respecting larch, though it was said to be liable to disease, he was aware that it could be obtained of good quality and large in scantling if properly grown, and should not be used if it was found to be converted from small stuff.

With regard to all English-grown timber of whatever variety architects would first want to know where supplies could be obtained, and he suggested that the prominent timber merchants should be consulted.

Mr. Max Clarke elicited the information that the English Forestry Association had been in existence for only a year, one of its objects being to collect information on the existing supplies of English timber. Speaking of the difficulty found by architects he pointed to the restricted use of timber at the present day, owing to the advent of steel and modern methods of construction, timber hardly being required at all in public or monumental buildings or Government offices. Contractors told him they were totally unable to obtain English oak, and if they could it would be unseasoned, not of such good figure as the foreign, and if used would warp and shrink badly. The builder invariably preferred foreign oak for decorative purposes and therefore did not keep a stock of well-seasoned English oak. If clients were prepared to pay the enhanced price consequent on the use of home supplies and in order to obtain more durable and beautiful qualities the architects would endeavour to assist, and they would certainly be more satisfied at the result. He related his experiences in the use of panelling, observing that it was nowadays all a question of speed of work and time of completion.

He asked for information as to what could be obtained from home-grown stocks; where could one get tie-beams of say 45 feet length of 14 inches by 6 inches? The merchants' catalogues and the text books gave no information of the nature required, and he assumed there was therefore no stock of English timber on the market. Merchants were after all but mere middlemen, they usually had no plant for the conversion of timber.

Decorative firms were often found unscrupulous in their methods, and architects should endeavour to combat this by using their influence in favour of English ornamental woods, as the difference to the decorator was practically nil.

Elm he had found invariably twisted in a remarkable manner, and instanced what had been observed at the Gidea Park exhibition in one house where the joinery was wholly of elm.

Teak was now fast supplanting English oak in buildings where only small scantlings were required as in curbs and sills; the oak is often found to behave badly under various trying conditions.

He advised the fullest publicity of the movement, and this should be in a well-organised manner, and an appeal made through the building press and leading dailies. It would even be advisable to have a London office, and to advertise the work of the Forestry Association.

Mr. Munby advocated promoting a better knowledge of forestry, and a study of the Continental methods of planting. He feared the high railway rates were an insuperable obstacle, and no reduction of cost could be expected while the preferential tariff existed in favour of foreign shipments, to the entire exclusion of the home-grown produce, even if it existed in large quantities.

In conclusion Lord Clinton thanked the architects present for their views which would be extremely useful, and he expressed the hope that a further conference might take place between them in the near future.

Appended is the Agenda Paper which was before the Conference.

W. WOXNACOTT,

DIGBY L. SOLOMON,

Hon.-Secretaries Science Standing Committee.

AGENDA.

1. Discuss:

- (a) Reasons for restricted use of English timber in contracts.
- (b) Steps for extended use of English timber in contracts.
- (c) Methods of overcoming difficulties, especially as to
 - (1) Supplies of English timber.
 - (2) Supplies of *seasoned* ditto.
 - (3) Securing large stocks at depots.

2. Discuss time and means for initiating steps.

3. Discuss the use of

- (a) English *Oak* for girders, principals, roofs and general constructional work.
 - Ditto interior fittings &c., including staircases, doors, panelling &c.
 - Ditto wood block flooring.
 - Ditto gates and fencing.
 - Ditto shingle roofing.
 - Ditto any other purposes.
- (b) English *Elm* for doors and interior work and fittings.
 - Ditto floorboards, &c.
 - Ditto any other purposes.
- (c) Native *Scotch Fir* for joists and principals.
 - Ditto window and interior fittings &c.
 - Ditto weather boarding &c.
 - Ditto any other purposes.

- (d) Native Larch for fencing posts and rails.
Ditto entrance gates &c.
Ditto any other purposes.

THE EXAMINATIONS.

The Final Examination: Alternative Problems in Design.

SUBJECT IV.—A SENATE HOUSE FOR A MODERN UNIVERSITY [JOURNAL, 29th June 1912].—The Board of Architectural Education have approved the designs sent in by the following candidates under the new regulations:—E. F. Bothwell, A. D. Clare, H. A. Dod, R. Duckett, E. Gee, E. Prestwick, E. H. Gibson, K. Glover.

MINUTES. I.

At the First General Meeting (Ordinary) of the Session 1912-13, held Monday, 4th November 1912, at 8.30 p.m.—Present: Mr. Reginald Blomfield, A.R.A., *President*, in the Chair; 48 Fellows (including 20 members of the Council), 44 Associates (including 2 members of the Council), 21 Licentiates, 3 Hon. Associates, and numerous visitors—the Minutes of the Meeting held 24th June 1912, having been already published, were taken as read and signed as correct.

The following gentlemen attending for the first time since their election were formally admitted by the President, viz.: Charles Cowles-Voysey, *Associate*; Albert Thomerson, Frank Boulter Adams, Herbert Reginald Saxty, Thomas Percival Tinsley, Cecil Aubrey Massey, Alan Leslie Belcher, Frederick Julian Wass, *Licentiates*.

The Secretary announced that the following candidates, being found eligible under the Charter and By-laws, had been nominated for election in the various classes: As FELLOWS (20): Lionel Upperton Grace [A.], William Howe Greene [A.] (St. John's, Newfoundland), Arthur Henry Hind [A.], Timothy Honnor [A.], Victor Daniel Horsburgh [A.], John James Joass [A.], Franklin Kaye Kendall [A.], Frank Lishman [A.], Alan Edward Munby, M.A. Cantab. [A.], James Campbell Reid [A.], Professor Charles Herbert

Reilly, M.A. Cantab. [A.]; and the following Licentiates who have passed the examination qualifying for the Fellowship: Courtenay Melville Crickmer, Charles Ernest Elcock, William Haywood, Owen Cary Little, Arthur Campbell Martin, Oswald Partridge Milne, Sydney Joseph Tatchell, John Watson, Frederick Willey. As ASSOCIATES (52): Albert George Westerman Allen, Newstead Adams Allen, P.A.S.I., Herbert Joseph Axten, Francis Renton Barry, jun., Thomas Paul Bausor, Thomas Penberthy Bennett, John Archibald Bessant, Sohrab Keikhoosru Bhedwar, Alfred Booth, Herbert John Brownlee, Gordon Brock Bridgman, John Alford Cheston, David Shearer Cullen, Kenneth Dalgleish, Gerald Morton Dunn, Charles Glynn Evans, Oliver Gaunt, Thomas Gilchrist Gilmour, Harold Goldstraw, John William Green, John Culy Harvey, Percy Estcourt Holland, Ernest Hardy Honeyburne, Rowland John Hughes, John William Kay, Joseph Robinson Maughan, David James Moir, Frederick William Moore, Robert George Muir, Frederick Evelyn Openshaw, Wilfrid Scotter Owen, John Page, B.A. Cantab., Geoffrey Eastcott Pearse Pearse, Travers Pickmere, Thomas Campbell Pope, William Stewart Putwain, Robert George Roberts, John Charles Robinson, Stanley Philip Schooling, Eric Wilfrid Boning Scott, William Walter Scott-Moncrieff, Thomas Retford Somerford, Willie Rowland Spurr, Ralph Stokoe, Eric John Sutcliffe, Vasudeo Ramchandra Talvalker, Geoffrey Ronald Gilbertson Topham, Philip Edward Webb, John Lucas Warry, Walter George Whincop, Llewellyn Edwin Williams, John Hubert Worthington. As HON. CORRESPONDING MEMBER: Stanislas Louis Bernier (Paris).

The Secretary announced that the Council, in the exercise of their discretion under By-law 78, had admitted the Hampshire and Isle of Wight Association of Architects to alliance with the Royal Institute.

The President having delivered the Opening Address of the Session, a vote of thanks, moved by the Right Hon. the Earl of Plymouth, and seconded by Sir Aston Webb, C.B., C.V.O., R.A. [F.], was passed to him by acclamation and briefly responded to.

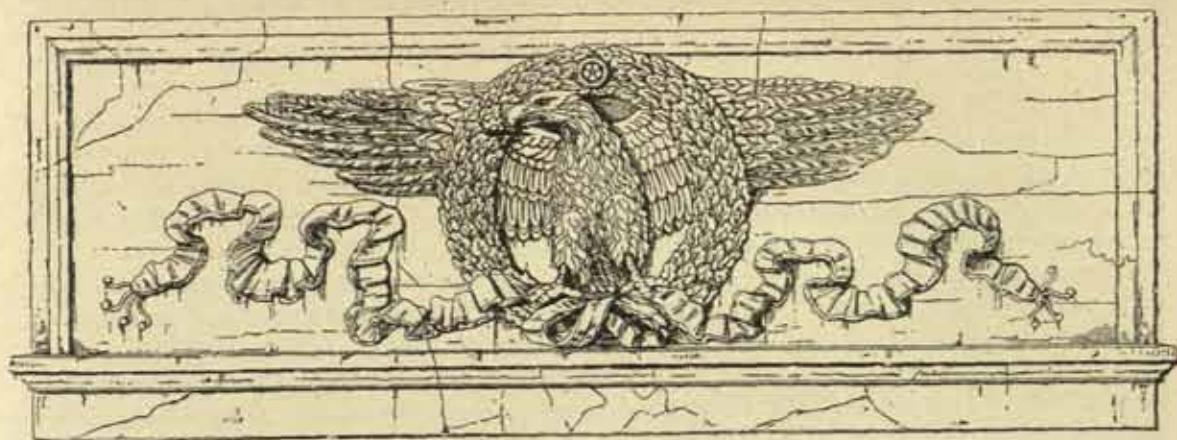
The President called attention to a collection of original drawings and designs by Bibiena and others exhibited in the Meeting-room, which had been presented to the Institute, through Sir Charles Barry, by Sir James Drummond Stewart in 1838.

The proceedings then closed, and the Meeting separated at 9.45 p.m.

Town Planning Conference 1910.

By direction of the Council the subjoined balance-sheet of the Town Planning Conference 1910, as approved by the Council on 4th December 1911, is published for the information of members:

Expenditure.		Income.	
	£ s. d.		£ s. d.
Transactions	1,040 13 5	Subscriptions	1,344 1 5
Exhibitions	1,030 12 4	Less returned	15 15 0
General Printing	538 9 5	Dinner	250 7 0
Dinner	357 3 6	Less tickets returned	4 4 0
Visits	249 4 4	Visits	274 3 0
Meetings	284 6 7	Less tickets returned	250 18 6
Extra Assistance and Translating	272 14 10		5 15 0
Advertising	209 9 5	Exhibition	275 3 0
Handbook	173 10 3	Advertisements	131 2 9
Stamps and Petty Cash	150 13 7	Publication Bureau Sales	127 17 3
Badges and Wallets	75 2 10	Ladies' Subscription for Badge for Mrs. Burns	10 8 11
Reporting	45 13 0	Sale of Transactions	1 7 6
Design for Poster	15 13 0	Amounts received from R.I.B.A.	297 7 1
Stationery	12 3 3	Accounts to be paid	1,268 18 8
Interest on Overdraft	2 8 8		
Honorarium to Staff &c.	177 10 9	Less Balance at Bank	2,405 18 4
		Total cost to R.I.B.A.	210 6 5
			2,195 11 11
			£4,633 7 10



BATH: A COMPARATIVE STUDY.

By J. L. BALL, Director of the School of Architecture, Birmingham.

Read before the Royal Institute of British Architects, Monday, 18th November 1912.

THOSE who have much experience in directing the work of students will understand the difficulty of arousing in them a clear apprehension of the sensuous element in architecture, of that *architectonic* quality, which is neither pictorial, nor sculptural, nor rhythmic, nor perhaps altogether structural. Each art has its own special phase of beauty, incommunicable in the forms of any other; and, for the student, a clear recognition of the order of impressions which is peculiar to his art, which in fact defines it, is the first step in aesthetic culture. To discriminate then, in every species of architecture, the essential architectonic element, to disentangle this element from others, to compare the various expressions of it,—here, one may say, lies the true business of the student. And this central secret of architecture can be penetrated only through a certain intimacy, by personal contact with the actual works of architecture. In painting, the pictorial element; in poetry, the element of rhythm; in architecture, the architectonic element; the sensuous element peculiar to any art, is learned by direct experience, and cannot be felt through the medium of any representation. The supreme teacher of architecture is architecture itself. Models, verbal description, drawings, photographs,—things valuable enough, as everyone knows, in their way,—are useless here. For the essential properties of architecture are properties of solids;—hardness, weight, texture, density, mass, actual size, definite materials placed in a definite order, fixed contours, immutable outlines. Of all such qualities the complex result is apprehended only by the senses, by sight and touch; it is indescribable in words, as the scent of a flower or the peculiar quality of a wine is indescribable. Photographs, and even drawings, of architecture, stereotyping as they do a given moment, a single phase, are no true presentment of it; for a great work of architecture has a kind of *personality*, fluctuating with mood and circumstance, and can be realised only by those who ramble about its arcades, and pass in and out of the doorways, and who watch for its expression, not at high noon only, but in the twilight and in the morning. As, in the Arabian tale, the precious drugs concealed in the handle of the bat transmitted their virtue to him who held it, so in architecture, virtue exhales from the antique walls and stones.

The law then, the universal law, is that art addresses itself primarily to the senses, and only through the senses to the understanding and the imaginative reason. What is really important to the student is—not to get together a sort of mental compendium of architecture from representations of it,—but to use all representations, books, photographs, drawings, to

sustain and reinforce the impressions which he himself has received from personal contact with works of architecture. No doubt this principle is generally understood, but a more precise recognition of it might save us from some mistakes; from the mistake,—may I say it?—of expecting students in the elementary stage, in the first year or two of their course, to form ideas of some foreign and remote and highly specialised kind of architecture,—Greek let us say,—of which they have not seen, nor are likely to see, even the fragments. To draw models in the abstract may perhaps be a discipline, but it is not the discipline of architecture.

In the hope, therefore, of encouraging students in the pursuit of this personal intimacy with existing works of architecture, I propose this evening to offer some brief comment on Bath, and incidentally, Wells; cities well known, easy of access, at no great distance apart, possessing between them a fine series of architecture of different schools, the diversity of which invites fruitful comparison. For those who are no longer students, who are immersed in the practice of our profession, and to whom Bath and Wells and anything I may have to say about them will be but as a thrice-told tale, I wish patience, and pleasant memories, as for a short time we wander in thought through those familiar streets.

It is as a Roman sanatorium,—*Aquae Solis*,—that Bath emerges from the region of fable. The remains of the Roman baths,—a small fragment only of the *Thermae* which, with Temples and Gymnasia, once covered, so antiquaries tell us, more than seven acres,—are nevertheless the most considerable relics of Roman architecture in Britain; and to the student of that architecture, striving to piece together his odds and ends of knowledge,—to bring all into focus,—most valuable. Indeed to come upon these remains, not under a southern sky, but in our own pastoral Somerset, is to receive a fresh impression of Roman power and fortune. It is surely with no ordinary emotions that we see and touch the very walls, the very columns, which were built in remote Britain in the second century. From these *vestigia*, these large foot-prints, the stature, even the features, of Hercules may be inferred: we perceive the strength of the giant, and the coarseness. And so, wandering amidst ruined walls and fallen columns, among the fragments of sculptured stone now sheltered in Brydon's graceful peristyle, all that we know, or have heard, of Roman architecture seems to acquire an instant reality; its strong lineaments, at once stern and ornate, self-reliant and luxurious, grow more distinct. Let us for a few minutes consider some aspects of the image that it presents.

It is not easy to explain the spell which Roman architecture casts over us, its defects are so obvious, its virtues less obvious. How different, we say, is this from the Greek! how inferior its spirit to the Greek spirit,

“Mild and inscrutably calm.”

Such is the result of bracketing together schools of architecture by superficial resemblance, and ignoring the deeper influence of temperament. The temperament of Roman architecture is not Dorian, is not Ionian, is not even Corinthian, it is Composite or Roman. The mixture of diverse elements, of conflicting ideas, is characteristic of it. That curious ambiguity of the Romans,—you cannot call it indecision,—which meets us in other departments, meets us here also. Just as their altars smoked indifferently to the Syrian Astarte and to the Genius of Caesar, so too in their architecture there is a divided allegiance, a crude eclecticism; it throws together all sorts of incongruous elements, it adds the Ionic to the Corinthian, and compromises the lintel with the arch, it mixes Greek simplicity with the pomp of Asia, and is severe and grandiose at the same moment. In truth what the Romans were always looking for was not perfection of any kind, but power, and this easy tolerance of inconsistencies in their architecture goes far to explain its vogue, its wide adaptability. Nothing was rejected that might tend to make it more flexible, more adaptable to all uses. For the first time architecture steps

down from its lofty isolation as an art sacred to the temple and the palace, and becomes in a certain sense popular.

The coarseness, too, of Roman architecture is not an accident but an essential of it, a masculine grossness and predominance, which also has a place in art. For this hardihood, this coarseness of fibre in it, is not a negative quality only, as implying no more than the absence of refinement, it is an energy, a faculty; so that while Roman architecture was often clumsy and unimaginative it was never puerile or trifling; this *fortuna virilis* kept it free from the effeminacy which spoiled so much work of the Renaissance, and especially kept it true to a grand tradition of scale;—Roman architects, for instance, never forgetting the dignity of the Order, never degrading it to a toy, as some later architects of Bath did, notably in the *Circus*. And coarseness here has such an intimate and immediate connection with endurance that it becomes really a sort of exaggerated emphasis of strength. Strength in all forms was the true divinity of the Romans, their genius was for construction, they thought and worked always for eternal durability. Here, in Bath, violence and the hand of time have not obliterated, nor much impaired, their massive basements. What stone-work is this which, alone of all the masonry in Bath, shows no evidence of decay? What is the secret of this concrete, this mortar, made without Portland cement, yet still hard and impenetrable as rock? The conspicuous durability of Roman architecture makes most later work seem temporary in the comparison, and adds pathos to its ruin.

Nevertheless, by reason of its idealism, this robust heterogeneous architecture has left its large impress on the world for all time. And one feels that the ideals of the Roman people centred very much in the *city*; the ideal life with them was the urban life. Poets indeed might celebrate rural joys, as poets are wont, but to the true sons of Romulus the life of cities was the best. They loved the secure seat, the interests of the temples, of the forum, of the theatre, of the baths. And this instinct of theirs moulded and coloured their conception of architecture, so that they thought of it not principally as domestic, in the modern sense, nor as religious, but as civic; as the heritage of Roman citizenship and the emblem of Roman order, as the decorum and piety of civil life. Therefore they founded cities, and laid them out with a wise prevision, and adorned them with noble monuments. They did not wait until a hundred thousand people had congested themselves in squalid alleys, and then begin to talk about town-planning.

But we may not stay any longer in this strange and silent and fascinating place. As we stand here on Roman pavements, amid the ruin of so much greatness, while the electric cars are sounding in the street above us, the awful gulf of eighteen centuries seems to close up, and we join hands, for a moment, with the Masters of the World.

For a city which is the seat of an ancient bishopric the mediæval record in Bath is scanty. It might almost seem as though, in the quaint partnership of the two cities, the illustration of the Gothic phase of architecture had been left to Wells. Not the cathedral only, but the whole aspect of Wells, preserves the spirit of the middle ages. In those narrow streets of gabled houses, the little market-place, the gateways and closes, the cathedral with palace and college,—all clustering together there among the wooded Mendips,—in all these things, and in the ecclesiastical air of the place, and in a certain neat compactness which it has, and in the gossip and leisure of little town life, there still lives for us something of the true atmosphere of mediæval art. But nothing of this atmosphere exists in Bath, where the Abbey church stands alone, in a sort of priestly isolation, the last word of Gothic art in a city of the Renaissance.

Bath Abbey was begun in 1499, replacing earlier structures, was partly ruined at the

Dissolution, and partly rebuilt between 1597 and 1616. Thus it belongs entirely to the decadence of Gothic architecture, and has for us something of the mournful interest of a survival; as of one who, having outlived his contemporaries and friends, yet lingers, a stranger in a changed world. For by the middle of the sixteenth century the drama of mediæval art was played out. That architecture which meets us at Wells cathedral in the flush and animation of a wonderful youth, with the air of spring about it, we find at Bath Abbey in the last stage of a no less wonderful decline; beautiful still, with the beauty appropriate to winter. For indeed periods of decadence and death have their appointed place in the great cycle of art, just as periods of youth and prime have; each is necessary, each comes with its own special order of impressions, its own special gifts for the imagination. In Landor's majestic words: "Everything hath its use; Life to teach us the contempt of Death, Death the contempt of Life." And so, in Wells cathedral,—in that vivid and dramatic west front of which, since Mr. Prior and Mr. Lethaby have spoken of it, nothing remains to be said,—in Wells cathedral throughout, not the sculpture only, but every line of the architecture, is intense with life; life triumphant, life contemning death. But in Bath, in this city of pagan memories, it is the pagan sentiment which finds expression in the last words of Gothic art. Everybody knows those strange representations of the Dance, or Triumph, of Death, which one meets here and there in the painting and sculpture of the later middle ages, grotesque works, full of a haunting sense of the weariness and futility of life, of the greatness of death. Bath Abbey recalls such works, for here we find architecture expressing, in its grave monumental way, the same ideas. In these rigid attenuated forms, from which fire and passion and energy have departed, we see the composure, the high indifference, of death.

And, quite in accord with this, there is in Bath Abbey a curious felicity and smoothness of *technique*. The vaults are the best of fan-vaults, the proportions, at least of the interior, faultless. We feel that the end is achieved; the fancy, the invention, the experiment, of three centuries of Gothic art, seemingly inexhaustible, have come by inevitable steps to this, and terminate here, in this chill perfection.

The Roman city, the mediæval city, of Bath are gone, or survive only in the profoundly interesting fragments which we have been considering. But the famous Renaissance city of the eighteenth century has a different claim on our regard,—it exists. We still walk the streets, still pass in and out of the buildings, which are associated with a crowd of brilliant and attractive people, and with creatures of the imagination hardly less real. The Assembly Rooms, the Pump Room, Milsom Street, the Parade, the Crescent, are much the same to-day as when Miss Burney's, and Miss Austen's, and Sheridan's, lively personages played their parts on the background of this architecture; itself almost a branch of literature, with qualities of the intellect rather than of the emotions; but nevertheless possessing, quite apart from its historical associations, and from the literary fragrance which clings to it, a real charm and distinction. And in speaking of the eighteenth century architecture of Bath,—need I say it in this room and to this audience?—I include also the work of Brydon in the nineteenth; for, by the turn of his genius, and by his faculty of identifying himself with his subject, Brydon rivalled, perhaps excelled, his predecessors, and shares their fame.

What then is the precise value to us of the particular phase of the Renaissance which Bath presents? The question is important, for no architecture has been more absurdly praised, or more absurdly blamed, and it merits neither extreme. "That beautiful city," says a celebrated historian, speaking of Bath, "which charms even eyes familiar with the masterpieces of Bramante and Palladio,"—do not we recognise, in such a sentence, the note of exaggeration? On the other hand there have been critics, of the highest order, who have felt for this, and

indeed for all the different schools of the Renaissance, a profound dislike, and have covered them with intolerant scorn. Such wholesale condemnation is to be regretted, its tendency is gross and illiberal, and it fosters the common notion that art is a controversy of personal likes and dislikes, and subject to those ethical laws which apply to conduct. What should attract us in art, what we ought to look for in it, what alone makes it really valuable to us, is the promise of *life*. For our moments pass quickly, the individual life is circumscribed, much of it is lost in routine, in lethargy, in stereotyped emotions. Art comes to us with the promise of an enlarged, a fuller, a more various life,—more intense moments, multiplied sympathies. It offers us experiences, situations, modes of activity and thought, which altogether transcend the narrow individual lot; so that, by its magic, we live in a thousand lives, and share strange experiences, and walk in untrodden ways. And so, leaving generalities, we may conceive of architecture, not as expressing this or that set of powerful ideas, but as reflecting certain broad and luminous aspects of life, some more imposing, others less, but all in their degree valuable to us as part of the general heritage of culture; and its success will depend much more on the manner of the presentation than on the actual worth of the aspect presented. For life is extremely complex, it is not made up entirely of heroic or exalted moods, and art may very well occupy itself with aspects of life which, though not the noblest, are nevertheless not ignoble. Here, in Bath, the Renaissance of the eighteenth century has no claim to creative genius, we must not look in it for the expression of great ideas, the pride of dominion, the ecstasy of the religious life; nor for passion, nor for mystery; its virtues are all social, domestic. It is the architecture of an age which was quick and critical, but not very imaginative or profound. It represents, it is even part of, the learned culture of its age; a culture singularly cool, unimpassioned and fastidious; devoted, in literature and art, to a certain classic ideal of form; pursuing an ideal correctness even in trivial things,—in an epigram, in the details of a room;—a culture which valued formula and hated eccentricity. It is the architecture of fine manners and courtly phrases, the reflection of a sparkling and highly finished existence passed amid much dancing and music; the classical sentiment of the age pervades it, the Dorian mood “of flutes and soft recorders.”

All art, by the law of its nature, must be, in a sense, romantic; and all art that has reached full attainment is, in a sense, classic. In the eighteenth century the word “classic” was taken in a more restricted meaning, yet, even in that meaning, one may say that there will always be a certain order of minds to which the classic ideal in art will appeal; minds attracted more by the one perfect expression, the one perfect outline, than by the careless opulence of romantic genius. On the other hand, those of us who are conscious of being most strongly drawn by the romantic element in art have all the greater need of the sedate and clarifying influence of the classic ideal. For the faults to which romantic art, even great romantic art, is prone,—profusion, excess, lack of discipline,—are precisely the faults which the classic ideal, by its lucidity and its restraint, exists to chasten. “Something of the severe,” says Landor, “hath always been appertaining to order and to grace: and the beauty that is not too liberal is sought the most ardently and loved the longest.” Restraint, severity, the resolute exclusion from one’s work of the superfluous, the crude first idea,—what a secret of style is there! For the severity of the classic ideal is not a negative quality, not an easy avoidance, not a refuge for intellectual poverty; it is formative, architectonic,—the concentration and economy of power.

So then in this Renaissance city of the eighteenth century the spirit of Roman decorum is revived; its streets and open places, and the order of its public and private edifices, were civic interests; and we have an architecture austere and sober, devoted to the classic ideal, and with little of the romantic in its mood. And yet with all this, and with much of grace and interest, there are mingled in this architecture some characteristic defects; defects which must be

understood if we are to appreciate its real merit. A certain sterility marks it, as though some hidden influence were obstructing its development. The century offered a clear field to the classical Renaissance, yet when we compare the architecture of 1800 with that of 1700 we perceive little progress or variety. On the whole there is a sleepy conformity to type, and if any considerable variation is essayed the variation proves degenerate; the constitutional defect of eighteenth century Renaissance being, in fact, a defect of variability. You remember how, in that wonderful book *The Origin of Species*, the great naturalist dwells upon what he calls the principle of Variation, the tendency in all animals and plants to exhibit variations from the normal,—“sports,” as the florists say;—and you remember too how he shows that this variability differs in different species, some possessing it in a high degree, while in others the power of variation is slight. Well, something like this law of organic life holds good in architecture too, and of course in the other arts. In all architecture there is the tendency to variation, but the degree of variability differs extremely in different schools. Gothic architecture, Wells cathedral for example, shows a variability, a readiness to “sport,” which is really astonishing, we can imagine it capable of variation almost without limit. Other schools of architecture are variable in different degrees, and here in Bath, in the classical Renaissance of the eighteenth century, we reach the extreme of a low degree of variability.

The theory on which the classical Renaissance was based may perhaps go far to explain this defect in it, the theory that the progress of architecture depends on following, with scholarly attention, a perfect model;—the perfect model here being the Rome of the Augustan age. Is there not in this an obvious confusion of thought? The perfect model is for the study, not for practice. Let it be agreed that Roman architecture of the first century is perfect, its being so makes it unfit to be a model for actual practice, since perfection admits of no development. It is a commonplace of philosophy that whatever is absolute cannot also be infinite; the two attributes, the absolute and the infinite, are mutually exclusive. Architecture then which is absolute, that is to say, finished, perfected, cannot be infinite,—unfinished, awaiting development,—cannot in fact be capable of essential variation; you may imitate it with scrupulous exactness, you cannot improve what is already perfect. And so we arrive at the general maxim that, as architecture approaches perfection its variability decreases, and with that its usefulness as a model for practice decreases also. Thus the early schools of the Renaissance, and the French school of the nineteenth century, show considerable powers of variation; but in both cases the variability is owing to imperfections, to the presence of elements quite foreign to the classical model; in the early schools it is owing to the local architecture with which the classical model was blended,—and partly to an imperfect knowledge of the model itself;—while French architecture of the last century laid all the world under contribution, and is variable by reason of its eclecticism.

But, though the classical Renaissance is limited in this way, it possesses another attribute which is often mistaken for variability; an attribute, as we have already noticed, of Roman architecture too, but which becomes more prominent in the Renaissance amid more complex conditions of life,—I mean adaptability. There is hardly any kind of building to which Renaissance architecture has not proved adaptable, from the greatest to the least, from the basilica of St. Peter to the small houses and shops which we see here in the streets of Bath. And this quality in it of adaptability is characteristic, for it is the serviceableness of an architecture whose temperament is somewhat detached and cold, which is distinguished by no very strong idiosyncrasy. When we come to compare this architecture of mild and rather homely sentiments with the architecture of passion and genius,—with Wells cathedral and Gothic architecture in general,—the value of adaptability becomes very evident. Gothic architecture, with all its abounding variability, its intense and flame-like imagination, is wholly without

adaptability. Do we doubt this? Do we need to remind ourselves of the disaster of the last century,—the effort, supported by so much enthusiasm, to adapt the solemn architecture of the religious ideal to commonplace and secular uses?

The various currents of thought and feeling which seek for expression in the architecture of an age are held, as it were, and directed, by the elements of strength and weakness,—by the limiting facts,—of the architecture itself; and the more we come to recognise these elements, these limiting facts, in the classical Renaissance of the eighteenth century, the better able are we to appreciate the qualities it offers us; its *finesse*; its delicate variations on the prescribed theme; and most of all its expression, its unique expression, of the amenities of domestic life. Domestic architecture,—architecture, that is to say, in which a definite sentiment of domesticity, of homeliness, is expressed,—belongs in a quite special sense to the Renaissance. Mediæval architecture had no place, in the epic solemnity of its mood, for a domestic quality, the little domestic architecture that remains to us from the Gothic period is significant of a somewhat arid and cheerless ideal. We must dismiss as improbable the alluring thought of a lost domestic architecture of the middle ages; what we really find at Wells, for instance, is the fortified castle of the Bishop,—a military stronghold,—the *Vicars' Close*,—a house of celibate vicars-choral of the cathedral,—works of interest indeed! but of an interest not properly domestic. It is only as we reach the end of the mediæval period, in the fifteenth century, that we come upon an architecture potentially domestic in feeling; and in the fifteenth century, long before the forms of architecture had changed, the Renaissance was already influencing its spirit. From the beginning onward one may say that the function of the Renaissance, the work for which it was reserved, was to bring the influence of architecture into the home of the plain citizen, to give in terms of architecture an expression of the domestic ideal. And so in these larger and smaller houses of Bath,—and in how many other places!—and especially perhaps in the interiors, we have not only the finished thought of eighteenth century architecture but the true measure of its originality; for it was just here, where the Roman model failed them, that the artists of the time became various and inventive. The cultured simplicity of these interiors,—these dainty parlours and staircases,—is admirable; and one is conscious sometimes of an almost *feminine* quality in the delicate proportions and cameo-like reliefs.

But it is time to turn away from this eighteenth century architecture of Bath, about which there still lingers the charm of an old-world refinement. No architecture has been more severely criticised, and doubtless it has its faults. Let us rather seek to emulate its virtues, its antique decorum, its frugality of ornament, its *civility*,—the subordination of personal whim to a civic interest.

VOTE OF THANKS FOR THE FOREGOING PAPER.

Mr. REGINALD BLOMFIELD, A.R.A., in the Chair.

MR. MOWBRAY GREEN [F.], in proposing a vote of thanks to Mr. Ball, said he had treated his subject in a very broad and masterly way. However much he might differ from Mr. Ball in his details or as to his conclusions, he could sincerely agree with his general proposition, that the work of the Renaissance was to give to the plain man some idea of architecture in his domestic life. Mr. Ball had treated his subject so broadly that it was a little difficult to summarise a reply; he would

therefore deal with some side issues which the Paper suggested to him. The essence of the subject seemed to lie in the expressions "adaptable" and "variable" as used by Mr. Ball, and applied chiefly to Roman architecture. It was, he thought, with the adaptability of the Renaissance that they should be, in this particular subject of Bath, mainly concerned. Of course they were little pleased at the wholesale sweeping away of the sixteenth and seventeenth century houses, which,

it would be remembered, were beautifully portrayed round the margins of Gilmore's map made at the end of the seventeenth century. But, given a clear field for classic Renaissance, he held that the outstanding feature of Bath was that it presented an example of the way in which the development of a city was carried out with foresight and skill, which was amply justified by results. It was then practically the Roman city upon which the work of succeeding generations had been built up, and, with the exception of one or two continuations outside the walls, it measured only four hundred yards from wall to wall. He mentioned that in order to give some idea of the small extent of the city at that time; and that was the point which should be driven home in arriving at a just estimate of the value of the buildings as seen to-day. It was true that from the end of the seventeenth century up to 1725, the local men had tried to break through the traditions of the earlier ages, and they really introduced a comparatively fine, broad treatment in their frontages. The type of Renaissance which they used may have been very debased, but it was a very interesting type. But no method of rebuilding the city had been definitely adopted. It needed a master mind, bold enough to foresee and lay down great lines of development which could be carried out, humanly speaking, without change. Hence—and this was his special point—for a period of fifty years down to 1775 the ideal was faithfully followed, until the advent of Baldwin and the particular features of the Adam Brothers with a corresponding decorative treatment,—on that point he differed a little from Mr. Ball, who stated that the architecture was without much change from end to end of the century. But it was just the establishment of this ideal which did so much for Bath. They could afford, he thought, to pass by Mr. Ball's criticism of a "dull conformity to type." But there was another important point touched upon in Mr. Ball's paper—viz. the question of scale. Mr. Ball was not alone in his thought that the buildings of Bath were without scale, that they lacked the true dignity of scale. Incidentally, Mr. Ball spoke of the degrading of the order in the Circus, that it was triple, and used with accompanying small parts. But, as would be seen in the Colosseum, the Romans themselves were not averse to doing somewhat similar things. Was not the true question of scale explained by the desire of the designers to conform to the surroundings of the place? The city was bounded on the south side by Beechen Cliff, and on the north side by Lansdown; and it was only up the southern slopes of Lansdown that the city could develop to any great extent. It was true it might have developed east and west, but had it done so it would have been at the expense of severance from the city itself; and, as Mr. Ball truly pointed out, this was an age when the civic life appealed more

than anything to those who lived in it. Of the fine scale in the laying out of the streets and squares there was ample evidence. Queen Square, for instance, was 300 feet from house to house. North Parade had a footway of fifteen feet, and a total width of fifty feet. South Parade had a footway of thirty-two feet, and a total width of seventy feet. The Crescent had a total width of fifty-two feet, irrespective of the fine lawn in front of it. The extraordinary thing was that as the century progressed the scale became bigger and bigger, until in Pulteney Street and in the estate on the other side of the river the streets were laid out on the most enormous scale, following on Robert Adam's designs, which were to be found in the Soane Museum. Pulteney Street measured 100 feet from house to house, and eighty feet from pavement to pavement—the width of Regent Street—and it was 1100 feet long. The scale was so immense that by the time one reached Sydney Place, unless one had a plan before one, it was impossible to discover what the meaning of the builders was. To have overloaded Bath with buildings on a large scale, however, would have given to it an air of depression. In fact, Bath must not be judged by other places. It was a small place without possibility of great development, and it had its environment; and to that environment the eighteenth-century builders did remarkable justice.

MR. L. MARCH PHILLIPS, in seconding the vote of thanks, said he had never heard a lecture which struck him as being more in accordance with the needs of this age than the one they had just listened to. Though he felt diffident in raising them, there were one or two points on which he was not fully in accord with the views put forward by Mr. Ball. Mr. Ball had said that the Roman Renaissance was the ideal which inspired Bath; and he spoke of the city of the eighteenth century by which the spirit of Roman decorum was revived. It seemed to him that the Renaissance in Europe was composed all along of two streams or threads. There was the Roman Renaissance, and also the Greek Renaissance with it; and very often in Italy, and in France, and in this country in the eighteenth century there occurred forms of classical Renaissance which were not Roman at all, which Romans would not have sympathised with, for they were purely Greek in feeling. There was, he thought, a process of sifting going on all through the Renaissance—sometimes Greek elements prevailing, sometimes Roman elements. Some architects were pledged to one, and some to the other. One would not hesitate, perhaps, to say that Michael Angelo himself, "great barbarian" as he was, was Roman, but that Bramante was Greek. Again one would say that Wren was Roman, and that Adam was Greek. All through Georgian work it seemed to him that there was a notable restraint and consciousness of the value of

smooth surfaces. This could be seen not only in architecture, but in old silver work, in old Sheffield work, in Sheraton sideboards, and so on. In these were apparent artistic ideals which were not Roman, and which depended on a restraint which the Romans had not much sympathy with. He thought that the share which Greece had in the Renaissance ought to be distinguished from the share which Rome had. But apart from such points of criticism, what he felt about the lecture was that it made the subject so humanly interesting. He wished that lectures and writings of this kind could be distributed among the ordinary public; architecture would then become what it ought to be, a humanly fascinating subject. They must all feel that architecture at present was, to a grave extent, cut off from life; and this meant not only the loss to life of a subject of extraordinary interest vividly interpretative of past nations and past races, but also it meant the loss of an ideal and an incentive to the working classes of the people. The President had referred to architecture as the Mistress Art. But it was something more than that, it was the Mistress Industry, for it combined and centred in itself a vast share of the industry of the country. If they separated architecture from life, they would have a craftsmanship and an artisanship which were more or less mechanical and wanting in dignity, and wanting also in happiness and a consciousness of their own worth. If, on the other hand, they united architecture again with life, they would dignify life again, and dignify labour as well. That, he thought, was the need of architecture, to be reunited to life, and they were tending in that direction, but in order that they might do so successfully it was necessary that the whole subject of architecture should be suffused and penetrated with the kind of ideas which Mr. Ball had put forward in his lecture. They must regard architecture as the expression of the individuality of past races, Roman, Greek, and others, because if they could get to think of architecture as the expression of the life of past people, they would then be able, and would have the wish, to make it the expression of their own lives also.

Mr. W. R. LETHABY [F.] said he should like to express his great pleasure and delight at Mr. Ball's excellent paper. It was an extremely able paper, one from which he would not lightly differ,—and therefore he would not differ from it at all. Bath was a wonderful city, perhaps the only city in England that had any architectural weight. What struck him during the delightful week he had spent there early in the year was the fear that it might be a little bit running down. He wondered whether they sufficiently valued Bath as a national asset. We had so many things that were too good for us; we could not live up to them. Here in London the best things were thrown away. Euston Station, for instance; it was so good, in its way, that

we did not know how to make use of it. The Central Hall was almost a waste place, the work was done in shanties. The same kind of fear struck him about Bath. And what he should like to suggest—though he feared these wild suggestions were not of any use—was whether it was possible to set about doing something towards a better appreciation and maintenance of Bath. It seemed to him to be a place that cried aloud for some national recognition; it was a place which might be made a Western University town. Think of planting a university at Bristol when Bath was close by! He wondered what the Greeks would have thought of it. He himself would as soon think of planting a university in Wolverhampton. The wonderful buildings of Bath seemed to be ready for something of the sort. Prior Park was one of the most astounding things in England. It was a great monument, and he was shocked to see how it individually was getting shabby. One scarcely knew what use to make of it; it was too big for us, too fine; but if some cry could go out for help, would it not be possible to get an effort made for its preservation? Some Agricultural College, or something of that kind, for the West of England might be possible. There must surely come a time when some sort of decentralisation would take place. He hoped, if that did occur, that Bath would have its chance before its beauty had passed away.

Mr. GEORGE HUBBARD, F.S.A. [F.], said that Mr. Ball's paper had no doubt opened up a good many avenues. He (the speaker) was inclined to think that architecture did not influence their lives quite as much as they imagined. It seemed to him that every age had its own particular architecture, and that architecture did truly express the feeling or the culture of that particular period. If that were so, it was the life and culture of the period which influenced the architecture, rather than the architecture influencing the life. Take Greek architecture, which had been referred to as being a standard of perfection; it was, he imagined, the standard of perfection only in so far as it absolutely and accurately represented the culture of the period. If the culture were altered, the architecture must be altered accordingly. We of the present day were not a particularly cultured lot; we were not as sincere as we might be, and, as a consequence, our architecture was not as perfect as it otherwise would be. Bad as our architecture was to-day, he believed it did really represent very correctly our unfortunate low standard of civilisation! No doubt if we could go back to those pristine ages when Bath was built, we should find ourselves living up to a higher standard than any of us attempted to live up to to-day. If architecture be taken in its broad sense as being an expression of culture, Gothic architecture was an expression of faith. When faith was strongest in the country, Gothic archi-

ture was in its highest form. But when the faith of the country flagged, Gothic architecture failed. To that extent, he found himself a little at variance with Mr. Ball, simply on the point that architecture did express the civilisation of the country. Architecture did not elevate us, but we elevated architecture when we attained to any higher standard of thought, culture, or scholarship.

THE PRESIDENT said that in the few remarks he had to offer he should be inclined to work backwards, beginning with the last speaker, Mr. Hubbard, who he thought hit the nail on the head when he said our architecture represented what we were worth. He was afraid that was the case, yet he did not feel so despondent about it as Mr. Hubbard seemed to be. The condition of modern architecture was not wholly bad, he thought, for there were distinct signs of progress and vitality about it. Mr. March Philipps had made some interesting remarks, but he (the speaker) could not entirely follow his criticism. Mr. Philipps had said that throughout the Renaissance there was a stream of Roman Renaissance and a stream of Greek; but technically the Greek Revival had only occurred within the last hundred years. What, he thought, Mr. Philipps really meant was, that some architects went for the Roman manner, and others aimed at the refinements and subtleties of architecture. But that was not so much the difference between Greek and Roman, as one which would always hold and prevail amongst artists; some men stopped at the big, bold effect, while others were not content with that, but were fastidious and severe on themselves. Mr. Mowbray Green, as they should expect from him, made a very spirited and eloquent defence of Bath, and stood up for the city on which he had written so well in his charming book. And he pointed out one or two matters in Mr. Ball's paper on which he (the speaker) was rather inclined to agree with him. He would deal with that presently, but he must first say how delighted he had been with Mr. Ball's paper. After all the dry-as-dust text-books they had to wrestle with, it was very refreshing to find a lecturer coming among them and trying to penetrate into the inner meaning of architecture, because that was what Mr. Ball had attempted. Those among them who had endeavoured to put into terms their feelings and their enthusiasms about great buildings knew how difficult it was; they were brought up short at once if they tried to convey to others their impressions with regard to these buildings. He thought Mr. Ball had done this in a most delightful manner. Still, he would venture to make one or two criticisms on what Mr. Ball had said. In regard to Roman architecture, he thought Mr. Ball took a sound histori-

cal view, and pointed out to them what he (the speaker) was glad to see was being realised, that Roman architecture was very far from being a mere pastiche of Greek architecture. In some respects it was inferior, but in others it was finer; and we should never forget that Roman architecture was the foundation of modern architecture, and the finest training for the young architect was still the study of the architecture of Rome. He did not think Mr. Ball had done justice to Bath as a great city and a great conception. They must recollect that at the time Ralph Allen set to work with Wood, no such thing had been done in England. The foresight and sagacity with which the town was laid out was something extraordinary; he certainly thought there was genius in it. Mr. Ball denied genius to Bath, but he might perhaps be inclined to extend that a little, because Bath was not only the best thing of the kind which had ever been done in England, but it was a city which could hold its own with great continental cities, with such a city as Nancy, which was a sort of *locus classicus* of civic design. We should not underrate what we have in our own country in that regard. With regard to the eighteenth century, he did not think Mr. Ball had done justice to all the undercurrents in that century. Mr. Ball seemed to regard it as a formal and prim affair; but it was not so historically, because deep in the eighteenth century were the roots of the Romantic movement, and we know that it ended in the tremendous catastrophe of 1790 and that cycle of events. So it was not sound in history always to describe the eighteenth century as a somewhat mechanical affair. There were passions deep down there waiting to find their way out, as there always would be in any civilised community. To return to Mr. Ball's admirable paper, it was one to which he should like to direct the attention of all their students, because the author had tried to penetrate through the screen of facts; but he felt sure that Mr. Ball would agree with him, that all students, before they could penetrate to these deep motives in the background, must know and study the facts. The lesson of Mr. Ball's paper was that above and beyond all these facts was a mysterious and elusive spirit which they should try to seize, if they were to understand the meaning of architecture.

The vote of thanks having been put to the meeting was carried by acclamation.

MR. BALL, in acknowledging the vote, said that as the President had let him off so lightly, the best defence he could make would be to say nothing; he certainly should not like to dispute any point of the kind with the President. In no paper of reasonable length could one get into all the nooks and corners of a period, and he admitted that there were lacunæ which should be filled in.

THE LIGHTING OF PICTURE GALLERIES AND MUSEUMS.

By S. HURST SEAGER [F.], Christchurch, N.Z.

THE lighting of picture galleries and museums is a problem which has been before the architectural profession since the early part of the nineteenth century. It is a problem of such universal public interest, that it is hard to realise that we appear to be as far from a true solution as in the earliest days. Anybody would very naturally think that if we require a gallery perfect in every way, we have only to go note-book in hand to the European centres of art, and copy exactly the form of gallery suited to our requirements. Let me at once state that we should be grievously disappointed. There is not a single European picture gallery that I am acquainted with that approaches perfection—some are atrociously bad, some are fairly lighted in parts, but not a single one is free from defects which should have been avoided. In 1907 and 1908 I went note-book in hand to all the principal British, French, Italian, and some of the German galleries, and am therefore in a position to support the statement made by Mr. A. W. Weissman, the architect to the City Museum, Amsterdam, in a paper read before the R.I.B.A. in 1907. He said: "Before designing my gallery, I determined to visit the European galleries, but I could not find a room which was entirely satisfactory. I therefore had to try for myself."

The question came prominently before the public as long ago as 1853. At that time it was proposed to enlarge or rebuild the English National Gallery. The Gallery had been built by Wilkin. It was completed in 1838, and the opinion expressed by a writer in that year, quoted in a leading article of the *Builder*, has been endorsed from time to time ever since by those who have been anxious to see our national collection worthily housed.

"In short," he writes, "judging from the profound deficiency evinced in the present National Gallery, and considering the distinguished names that were connected with the examination and approval of the designs for that building, it would be difficult indeed to imagine that either British statesmen or English architects have any enlarged or sound idea about the requirements of a National Gallery, beyond its mere name."

The article in *The Builder* concludes with these words:

"We sincerely hope that, when the matter comes before Parliament, men of all parties and political opinions will unite their endeavours to make such arrangements as may obtain for us a structure completely adapted for the purpose, and worthy of the age and country; not a building good enough, but the best possible; scientifically correct, structurally perfect, and architecturally magnificent."

This was written in 1853, in the early days of picture galleries and museums. It was then seventeen years since the National Gallery had been opened, and only twenty years since the opening of the first public picture gallery—the Alt Pinacothek at Munich. In this year Ruskin wrote to the *Times* as follows:—

"We are about to build a new National Gallery: may it not be arranged so that the pictures we place therein may at once be safe and visible?"

"I know that this has never yet been done in any gallery in Europe, for the European public have never yet reflected that a picture which was worth buying was also worth seeing. Some time or other they will assuredly awake to the perception of this wonderful truth, and it would be some credit to our English common sense if we were the first to act upon it."

"I say that a picture which is worth buying is also worth seeing—that is, worth so much room of ground and wall as shall enable us to see it to the best advantage. It is not commonly so understood. Nations, like individuals, buy their pictures in mere ostentation, and are content, so that their possessions are acknowledged, that they should be hung in any dark or out-of-the-way corners which their frames will fit. Or, at best, the popular idea of a National Gallery is that of a magnificent palace, whose walls must be decorated with coloured panels, every one of which shall cost £1,000, and be discernible, through a telescope, for the work of a mighty hand. I have no doubt that in a few years more there will be a change of feeling in this matter, and that men will begin to perceive, what is indeed the truth, that every noble picture is a manuscript book, of which only one copy exists, or ever can exist; that a National Gallery is a great library, of which the books must be read upon their shelves; that every manuscript ought, therefore, to be placed where it can be read most easily; and that the style of the architecture and the effect of the saloons are matters of no importance whatsoever, but that our solicitude ought to begin and end in the two imperative requirements—that every picture in the gallery should be perfectly seen and perfectly safe; that none should be thrust up, or down, or aside, to make room for more important ones; that all should be in a good light, all on a level with the eye, and all secure from damp, cold, impurity of atmosphere, and every other avoidable cause of deterioration."

Modern examples show that it is as necessary to impress these views to-day as it was at the time they were written. Unfortunately they have hitherto had but little weight with those entrusted with the design and care of our galleries and museums, for although our National Gallery was proved so deficient, nothing was done, and the original portion of the building remains to-day with all the defects complained of fifty-eight years ago. In 1876, E. M. Barry added a new wing which followed the old method of top-lighting, but with

the addition of an inner ceiling light. In these rooms such irritating reflections were found to be produced from a white marble border placed round the floor, that the border had to be removed.

Within the last year, further new rooms have been added. It would have been thought that with the experience gained from failures in the past and the advanced knowledge of the laws of light, we should at last have had a gallery quite free from defects—that the editorial plea of 1853 for a building “scientifically correct, structurally perfect, and architecturally magnificent,” would be granted. It was not to be, for so scientifically incorrect are they, that they were no sooner opened to the public than a wail of lamentation went up from all classes, expressed very forcibly and freely in the *Times* and other papers. It was stated in various terms that the method of lighting was so bad that it was impossible to view the pictures with any degree of pleasure. The reflections were in every case so pronounced that the picture itself could not be properly seen from any point of view. All the pictures in the National Gallery are glazed, but I hope to show that it is possible to so arrange the lighting, that no inconvenience whatever is experienced from the reflecting surface. It is possible for pictures to be seen perfectly when glazed if only the laws of light are properly understood and acted upon. That they should not have been in such a work is remarkable, especially in view of the fact that the rooms were built to contain the great masterpieces of the world, for which enormous prices were paid.

It may be thought that this is an isolated instance among modern buildings—unfortunately it is not. The National Portrait Gallery, erected in recent years for the especial purpose of exhibiting the interesting collection of portraits of England's eminent men and women, is a lamentable failure. Some of the galleries are so dark that it is with difficulty one can see at all. Some are side-lighted in such a way that the reflections are overpowering. I spent some time with the attendants manipulating the window blinds in the endeavour to arrange them so that the pictures could be properly seen. We found it impossible.

The most recent English Museum building is the new portion of the Victoria and Albert Museum. We have only to look at a photograph of one of the galleries, published in the *Architectural Review* of July 1909, to see that again precedent has been followed instead of principles, with the result that Raphael's celebrated cartoons, or other glazed exhibits on the walls, have become in the greater part, as can be easily seen in the photograph, merely reflections of the architectural features of the interior. Here, as in all other cases, the defect arises from allowing a flood of light to fall from the centre of the ceiling so that the spectators are much more brilliantly lighted than the pictures. This was the principle classicists consider was adopted for the Parthenon. It was the principle

adopted in the first picture gallery at Munich, and it has been thoughtlessly followed ever since. Thoughtlessly, for it can at once be seen that if the spectators are in a bright light and the reflecting surface of the glazed pictures in a subdued one, it is impossible to prevent painful reflections occurring. In addition to the galleries I have personally studied, I have examined the plans of very many others, and find this mistaken method is almost without exception followed.

Attention has always been directed to the size and form of the central ceiling light, and many methods have been claimed to be the best for ascertaining the exact relation the opening should bear to the size of the room. As the principle of having a top or ceiling lights is wrong, the rooms are, of course, all defective, and vary only in degree. Captain Fowke, who designed the galleries at the South Kensington Museum to contain the celebrated Sheepshanks collection, is perhaps responsible largely for the continued copying of bad precedents, for in the *Builder* of 1853 he proposes to consider the question scientifically, and to show by diagrams that the ceiling light he proposed would have such proportions and such relations to the picture surfaces, that the pictures would be well lighted and quite free from reflections. His diagrams show that he has only taken into consideration the reflections of the ceiling light itself in the picture, quite ignoring the fact that if a flood of light falls into the centre of the room, all objects illuminated there by the top light become themselves sources, not of direct, but of reflected light, and it is the reflections of these objects that cause the greatest trouble. Every picture gallery gives instances of this. It must be bad indeed if the reflected image of the skylight is seen in the picture, but there is not a single gallery I am acquainted with, whether by personal inspection or by illustration, which is free from reflected images of the spectators and all objects within the well lighted area. How bad reflections can be in buildings specially designed as galleries or museums is shown by a photo taken in the Museum at Cairo. It is in a top-lighted room with shallow glass cases lining the walls. It was absolutely impossible to see the exhibits. I tried in every way to get a photo free from reflections, but finally took one in which the reflected images—including the image of the photographer and his camera—quite overpower the contents of the cases (fig. 1). Yet of such reflections as these Captain Fowke takes no heed, and consequently his gallery, purporting to be on exact scientific principles, is as unscientific as those which preceded and those which follow. In my examinations of galleries I used a photometer—a meter for taking the exact exposure for negatives by noting the length of time a piece of sensitised paper takes to reach a certain depth of colour. I found by this means that in every gallery having central ceiling lights or roof light in the slopes of the roof, whatever their proportion and

however they varied in detail, all illuminated the central portion of the room much better than the walls on which the pictures were hung.*

Not only are irritating reflections thus created, but in all cases the pictures appear to be much less lighted than they are by reason of the contrast between the strong light in which the spectator stands and the subdued light on the walls. An extreme illustration of this effect is seen in standing outside a building and looking into door or window openings—the interior, by contrast, appears to be quite dark; on entering of course it is found to be an illusion, for the reason given under Law 4, that the interior is in fact well lighted. In many cases of bad lighting this contrast between the well-

suffer considerably by being placed in positions for which they were never intended. It is, we must remember, only of late years that pictures have been painted in the hope that they will be bought either for private collections or for galleries. The great masterpieces were painted under commission to fill some particular place. The conditions of lighting were known beforehand, and the picture painted to suit them.

It is the striving for a brilliantly lighted room from the architect's point of view, apart from the consideration of the special purpose to which the building is to be applied, that has led to the retention of the usual forms of ceiling or skylight, and the total disregard of the special arrangements needed for the effective lighting of the pictures. An excellent illustration of these two points of view is afforded by two notices of the new rooms at the National Gallery in the April 1911 number of the *Architectural Review*. The architectural critic, in describing the new work, says that the rooms "are brilliantly lighted," while an editorial note in the same issue has to acknowledge, apparently reluctantly, that the complaints made of ill-arranged lighting, and consequent reflections, are just, and says "that although it is not true, as some correspondents stated, that it is absolutely impossible to see the pictures at all, still the reflections do exist to a most annoying extent."

On the one side we have the architects rejoicing that a brilliantly lighted room has been erected, on the other side the painters and picture lovers complaining that this brilliantly lighted architectural erection is in fact an architectonic inutility, in that it quite fails in the very purpose for which alone it was erected "the excellence of every art must consist in the complete accomplishment of its purpose," is the legend cut in the entrance archway of the new Victoria and Albert Museum which leads to the gallery already referred to. In this connection Sir Lawrence Alma-Tadema may be quoted. In his speech at the reading of Mr. Weissman's paper, he said: "The best result is obtained, I believe, where the glass is in the sides of the ceiling, lighting the opposite walls only. . . . With top lighting, the floor is lighted, the pictures themselves are not."

This is the principle of lighting Mr. Fergusson believes was adopted for the Parthenon—a belief very widely supported. It is a more rational method, and is one that has been adopted in several galleries, certainly with only moderate success. Perfect success cannot be achieved by this principle, but failure has occurred because, as I hope to show, the methods adopted in carrying out the principle indicate that the principle was not clearly understood. The plea for this method of lighting was made in 1907, yet in spite of this we have in 1912 the new galleries designed on the old principle, leading to the same unfortunate result.

I have said enough to show clearly that all are agreed that the usual type of picture gallery,



FIG. 1.

lighted floor and the ill-lighted walls is removed by subduing and diffusing the light from the skylights by means of inner translucent ceiling lights—that is with ground glass which scatters the rays of light in all directions. This method is adopted, as I have said, in some of the rooms of the National Gallery and in Sydney, and it can at once be seen that this is not a desirable expedient. It does not get rid of the original evil, for the reflections are still there, although in a modified form, and, while the pictures can be better seen than before, they are in fact not so well lighted, and the whole gallery is gloomy and depressing.

Not only do the large majority of pictures suffer by reason of their ineffective lighting, but many

* The sensitised paper of course gives the actinic value of the light, but where white glass is used the actinic value and the visual value would correspond.

whether lantern-lighted, skylighted, or side-lighted, is either a partial or total failure as such, and that if we want to possess a picture gallery which shall be truly worthy of the name, we must disregard precedent entirely, and be guided solely by the principles which should govern the problem. Fortunately, the principles are few and simple, so few and so simple that it is astonishing they should ever have been disregarded.

1. *The angle of reflection of a ray of light is equal*

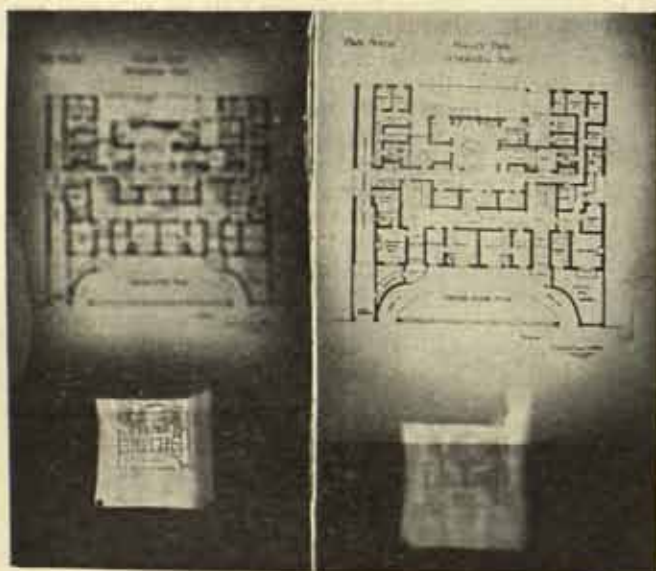


FIG. 2.

to the angle of incidence, that is to say that the angle at which a ray meets a reflecting surface will be the angle at which it leaves it. If, therefore, those rays of light entering from the skylight fall on a glazed picture and make with its surface an angle of say 45° , the reflected ray from the picture to the floor will also have an angle of 45° , and so for any other angle. If we stand in such a way that these reflected rays fall upon the eye, we shall see, not the picture, but a reflected image of the skylight.

In some galleries this occurs with pictures hung high up on the side wall, and is of frequent occurrence in the end walls even when the pictures are hung on "the line" or just above it. It occurs in the end walls of nearly all oblong galleries, as in our own galleries.

I have spoken of "painful reflections" advisedly, for I am convinced that the reason people get so extremely tired and suffer from headaches after but a brief study of pictures or exhibits is on account of the straining of the muscles of the eye when looking at pictures or show-cases which reflect images of illuminated objects. We must all have been conscious of the strain, but we perhaps have not realised that it does not result merely from the confusion of the picture by the superimposing of images by reflection on the same focal plane, but

by the superimposing of a reflected image in a different focal plane from that of the picture. An experiment has made this perfectly clear. Fig. 2 shows photos taken of two similar plans, one placed within glass and the other placed on a wall behind the camera, and illuminated so that its reflection is clearly seen in the reflecting dark surface of the glass. In the first photo the camera was focussed on the plan within the glass, which is seen to be quite sharp, while the reflected plan above it is merely a blur. In the second photo the camera was focussed on the reflected plan, which is now sharp (but distorted on account of the unevenness of the glass) while the glass-covered plan is considerably blurred. Thus it is proved that the reflection is far within the picture, it is in fact as far within it as the illuminated object is in front of it, and the size of the reflected object is in direct inverse proportion to the distance of the object from the picture. The reflection and the picture cannot therefore be clearly seen at the same moment, and there is a continual struggle and strain upon the eye in the endeavour to rivet the focus on the picture. It may be said that the eye is continually adapting itself to varying focal lengths in viewing the objects around us. This is true, and it can do so without strain because in no instance is one focal length superimposed upon another, as it is in the case of pictures with reflecting surfaces. The exact position and size of the reflection in the picture can at once be

determined by means of a diagram (fig. 3) showing a representation of the size and position of the illuminated object within or beyond the picture. Lines drawn from the extremities of the representation to the position of the eye of the spectator will, if they pass through the picture, show the size and position of the reflected object in it. This diagram is drawn on the assumption that the picture or reflecting surface lies in a vertical plane, and the position of the representation is found by drawing lines perpendicular to it through the object and setting off the distance of the object

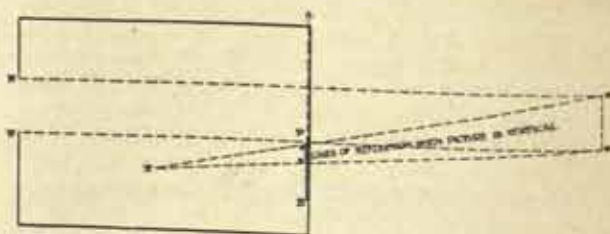


FIG. 3.

WW WINDOW OR ILLUMINATED OBJECT
AB PLANE OF PICTURE
WW REPRESENTATION OF WINDOW WITHIN THE PICTURE (VIRTUAL IMAGE)
EP THE PICTURE OR REFLECTING SURFACE
E THE EYE
RR REFLECTION IN PICTURE

from it. If the plane of the picture is not vertical, then the position of the representation will be found in exactly the same way—that is, by drawing lines from the object perpendicular to the plane of the picture, whatever the angle of the plane may be, as shown in the diagrams fig. 4. From this it

be seen that the reflected image has nearly, if not quite, disappeared.

As I have already stated, it is these reflected images of illuminated objects in a gallery which cause the greatest trouble, and yet it is these which have not hitherto been guarded against.

They are in nearly all galleries most annoying, for if you approach the picture from the left at any angle, it reflects the right wall. If you approach it on a line at right angles—that is, directly in front of it—the wall behind you and you yourself are reflected; while if you view the picture at any angle from the right, the left wall is reflected, together, in each case, with all illuminated objects.

Now this could not possibly occur—as proved by our experiment—if in every case care were taken for the picture to be illuminated much more brightly than the spectators or objects in the room. This sounds so simple that it is, I can readily believe, extremely hard to realise that this law has not been at once acted upon by any one when designing a gallery for the exhibition of pictures.

I have pointed out that with the usual top light the floor is more brightly lighted than the walls. It thus becomes a source of reflected light, and its reflected image will be seen in all glazed pictures on "the line."

A polished or light coloured floor capable of reflecting light—as for instance the white marble used in the floors of the additions to the National Gallery—should for this reason be avoided, and the floor covered with some dark light-absorbing material.

In the experiment made with the picture at the side of the window, it will be noted that the reflected image is always more powerful in the dark parts of the picture, and will often be very pronounced there, while in the light parts it may almost disappear, and if it has a white mount it may in that quite disappear. This leads us therefore to the statement of another law, viz.:—

3. *That the darker in tone the reflecting surface, the more powerful will be the reflected image.* From this we learn that the darker the picture the greater must be the contrast between the lighting of the picture and the lighting of the room. Dark pictures, to be effectively seen, must be in the highest possible light, while light-tone pictures may be placed in a subdued light with less risk from reflected images. Therefore it is possible to minimise the ill effects of an imperfectly lighted room by acting on this rule when hanging the picture.

4. *Light diminishes inversely as the square of the distance from its source.* The same law applies to heat, and an illustration of the effect of a fire will perhaps be more convincing. Close to a fire you know the heat is intense enough to scorch; four feet away, the square of the distance being sixteen, we get by our law only one sixteenth of

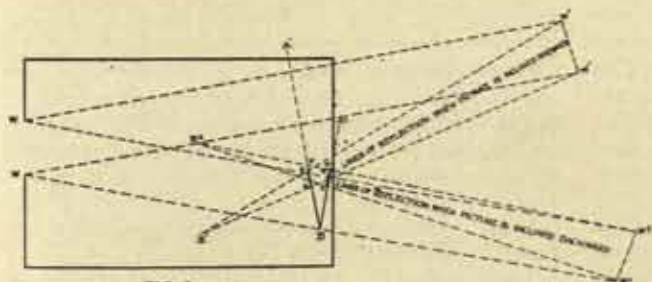


FIG. 4.

will be seen that if a picture is slightly tilted back the reflections will only be seen if the spectator is raised above the normal height, and that if it is tilted forward only when below it. The exact point at which reflections will be seen are in each case accurately determined. It will be seen that by this system we can determine not only the position and size of reflections in any reflecting surface from any point of view, but we can also determine the required position of the lights, in order to prevent any reflections being seen from the point of view found to be most suitable for viewing the picture.

The lines drawn from the eye to the representation of the window must pass through the plane in which the picture lies either above or below, or in a side-lighted room at the side of the picture—never through it. (See fig. 7.)

2. *Any illuminated object becomes in itself a source of light, and its image is reflected, as above stated in Law 1, in proportion to the relative illumination of the object and the reflecting surface.* That is to say, if a glazed picture is very dimly lighted and any object in front of it well lighted, then the reflected image will overpower the picture. If, on the other hand, the picture is well lighted and the objects in front of it dimly lighted, then the reflection, although there, will be scarcely apparent—so weak, in fact, that the enjoyment of the picture will not be interfered with. This can be easily proved by all in the following way:—First, place a glazed picture close to one side of a window and at right angles to it, and then stand close to the other side of the window. Both picture and spectator will in this way be equally illuminated, and the picture and reflected image will be striving for mastery. Second, move the picture back into the shade of the wall, and let the spectator remain illuminated as in the first case, and it will be seen that the reflected image is powerfully dominant. Third, now bring the picture into the first position, move back into the shade of the wall on the other side of the window, and it will

the heat of the fire; at eight feet, the square being sixty-four, we only get one sixty-fourth of the heat, showing, of course, in passing, the wastefulness of our open-fire radiant heat system. I have taken this illustration because our susceptibility to heat is constant, and we can by our feelings readily appreciate the truth of the law. Fortunately for us, our eyes have a wonderful system by which the amount of light admitted is regulated. You know the iris contracts in a bright light and expands in a dull one, so that by this very beautiful arrangement the number of bright rays of light which would enter the eye is reduced, and the number of dull rays increased, so that whether we stand in a very bright light or a very dull one a normal effect is produced. You will remember that if the contrast is great—as it is if you suddenly step from bright sunlight into a dark room—nothing can be seen till the iris has accommodated itself to the altered circumstances, and the same is true if we pass quickly from a dark room into sunlight. This plan of Nature's for keeping the amount of light which enters the eye as far as possible constant, makes it difficult for us to realise the truth of this law as applied to light, but those of us who have photographed plans or large drawings in a room with side light know how quickly the light diminishes. We find that if the plan is even only two feet wide the value of the light on the one side is so different from that on the other that with a correct exposure for the central part, over-exposure will occur next the window and under-exposure on the side of the plan next the room. The camera has discovered that the law exists as stated.

This law has an important bearing upon the lighting of picture galleries, for it teaches us that the higher we make our top-lighted rooms, the duller, the more gloomy the rooms will be. We arrive in this way—as at the Pinacothek at Munich, which is forty-five feet high—at the same effect as we have seen to be produced by shutting off the rays from the skylight by translucent inner glass. But this law has its most important bearing upon side-lighted rooms. In a top-lighted room the value of the light is the same in any one horizontal plane, so that the pictures along that plane are all either brightly or dimly lighted. Except, therefore, in the case of very large pictures occupying a considerable part of the vertical wall surface, the pictures will be fairly evenly lighted. In a side-lighted room, on the contrary, the light is equal in vertical planes and diminishes rapidly along any horizontal line on the side walls, but will be evenly dull or evenly bright on the wall facing the window in proportion to the distance between them.

Side-lighted rooms, as usually designed, are extremely unsatisfactory, and will be as long as architects consider the position and proportion of the windows in relation to the exterior instead of considering them solely in relation to the lighting of pictures. The idea of classical proportion and pleasing fenestration in accord with antique standards must be abandoned, and the problem solved from the standpoint of scientific correctness demanded by our early Victorian writer. He had a true idea of the importance of the elements for complete success in the designing of galleries, for you remember he placed scientific correctness first after this "structural perfection," and only after the requirements of these two were satisfied did he ask for "architectural magnificence." In most of the buildings containing side-lighted rooms the sequence of thought has been reversed. Windows of the usual form have been placed low down in the wall, with the result that on the back wall the reflections are extreme, and it is only by reason of the spectator blocking the direct rays of light and thus placing the pictures in shadow, that they can be seen at all. The back wall forms, in fact, as bad a position for the exhibition of pictures as could be devised. The side walls, if not too long, are well lighted for small pictures. Those near the window are brightly lighted, but none are free from reflections, for here, as in the case of top-lighted rooms, the spectators are standing in the best-illuminated space.

5. *Rays of light, if unimpeded, radiate from their source equally in all directions*, so that if we imagine a ball of light in the centre of a sphere, the whole of the inner surface of the sphere will be equally lighted, and as the diameter of the sphere is increased so will the light falling on its surface

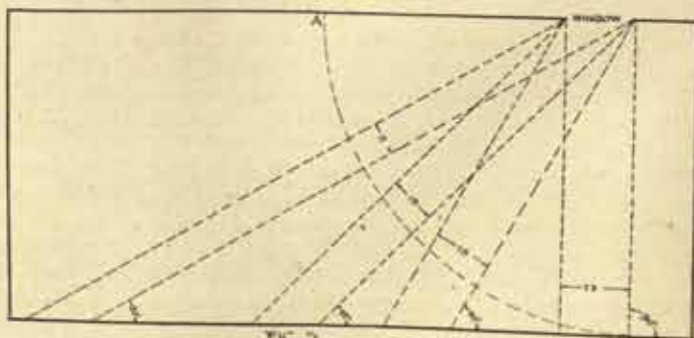


FIG. 5.
DIAGRAM SHOWING RELATIVE VALUE
OF BEAMS OF LIGHT FALLING ON AN OPPOSITE
FLOOR OR WALL.

be diminished. If the light is on one side of a rectangular room, the lighting of the walls will be uneven because different parts of their surfaces lie in the planes of concentric circles of varying diameter (fig. 5).

In the case of daylight, this law holds good only within the angle made by the reveals of the open-

ings. That is to say, that if we cut a hole of any form either in the walls or ceiling of a room, the limit of the rays of light passing through it will extend only up to a line drawn from the outer edge of one side to the inner edge of the other. The space beyond this will be in shadow, and will be lighted only by reflected light from the surfaces of the floor and ceiling. This can easily be proved at any window opening. The same law will be found to hold good whatever angle the opening makes with the horizon. So that given any opening in walls, ceiling or roof, we can at once determine what portion of the room will be lighted by direct rays of light and what by reflected light, and we should not make the mistake so often seen of skylights put in in such a way that the walls on which the pictures are placed are wholly lighted by reflection.

6. *Dark colours absorb light while pale colours and polished surfaces reflect it.*—This law must be kept in mind in designing picture galleries, for we must aim at having no reflected lights to interfere with the direct lighting of the picture. We must therefore have dark neutral colours on both walls and floors.

We have now enumerated the laws which must be understood and abided by if we are to solve satisfactorily the problem of designing picture galleries and museums. I have already stated partly the deductions to be drawn from these laws, but now let me summarise them before showing how they may be carried out in practice.

1. To avoid reflections in the pictures from the source of light, the angles made by the lines from the source of light to the picture must be greater or less than the angles made by lines drawn from the picture to the eye of the spectator when standing in the most suitable position for viewing the picture.

Note.—As this position will vary according to the size of the picture, it follows that the lighting suitable for large pictures requiring a distant point of view may be quite unsuitable for a small picture requiring a close point of view.

2. To avoid seeing in the pictures reflected images of spectators and objects in the room, the spectator and objects must be in a subdued reflected light, in marked contrast to the direct lighting which must fall on the pictures.

3. The darker the pictures the more brilliant must be the lighting upon them and the greater the contrast between the direct lighting of the pictures and the reflected lighting of the room.

4. In order to obtain a brilliant light on the pictures, the pictures must be as close to the source of light as the other conditions will permit, and the lighting must not be obscured by secondary ceiling lights or glazing.

5. The pictures must be within the space formed by lines passing through the inner and opposite outer edges of the light opening.

6. The rays of direct and reflected light which

fall on the walls and floors must be absorbed by dark colourings.

I have hitherto referred only to glazed pictures, because they form the crucial test as to whether or not the gallery is successfully lighted. It is true that unglazed pictures can be seen, and fairly well seen, even under conditions in which it would be impossible to see glazed pictures. But although they can thus be seen without the annoyance of reflected images, still they can be seen to far greater advantage under the conditions absolutely imperative for glazed pictures. For although no reflected images would be seen, light would be reflected from the surface of the pictures, sometimes appearing as bright patches of light and sometimes as spots of bright light in the uneven surfaces of the brush-work. In both cases false effects are produced which rob the picture of its true value. I do not therefore agree with the writer in the *Architectural Review* who, with reference to the new rooms of the National Gallery, said that it is only when glazed pictures are to be exhibited that it is necessary to take special precautions in lighting; that if the pictures in the National Gallery had not been glazed, no complaints would have been heard. Certainly no complaints would have been heard, but it is a poor ideal in this or any other sphere of human activity which demands only that a work shall be no worse than what we are accustomed to. Such was not the ideal of the writer I have quoted, who asks that we may obtain "not a building good enough, but the best possible."

Let us now see what attempts have been made to reach the ideal of perfect lighting, and then what form our galleries should have in order to fulfil the requirements laid down.

At Munich I was interested to see the principle of shading the spectators adopted. A ceiling was formed over the central part of the gallery, leaving a space of about eight or nine feet all round to allow the light from the skylights to fall on the pictures. The arrangement, it was said, was not new, and it is stated in the leader already referred to "that it was applied in a room in Newman Street, Oxford Street, London, built for the exhibition of West's pictures; and Messrs. Papworth, in their work, *Museums, Libraries, and Picture Galleries*" (I have not had an opportunity of seeing it), "describe a gallery built for Mr. Allnutt, of Clapham Common, between 1829 and 1833, where the lighting is on the same principle. Sir Charles Eastlake, who considers that the window or source of light by which a picture is seen, and the picture itself, ought not both to come within the range of vision at the same time, thought very highly of such an arrangement." Although the pictures could be well seen at Munich, the effect was not as successful as it should be, for two reasons, first because, the skylights being high, only a very diminished light fell on the pictures, and, secondly, the gallery was too wide, thus leaving too large a space in deep shadow. Still, the experi-

ment was very interesting and contains the germ which, if properly developed, would lead to success. If later designers had only realised this, instead of abandoning the idea in favour of the brilliantly top-lighted rooms, we should long ago have had examples which might well be followed.

The gallery in which the greatest amount of success has been reached for individual pictures is the Doré Gallery in London. It is, of course, only a small place, not larger than many artists' studios, but by means of dark floor covering and arrangement of dark divisional and wall curtains, each picture is separately seen, splendidly lighted by direct light from a hidden source. You can see no windows, no skylights, but the most brilliant light is that falling on the pictures. This is as it should be. There is, it is true, no structural perfection or architectural magnificence, but the lighting is certainly scientifically correct, and we cannot too often insist upon this as being the first consideration. These are the only two instances I know of where successful departure has been made from the usual type. An American Commission lately travelled over Europe to study its picture galleries with a view to the erection of one in America. They came to the conclusion, I believe, that an Italian palace makes the most satisfactory gallery. That there is a delightful charm about these old palaces I readily admit, but they are very far from perfect as picture galleries. They were designed as homes for the Italian princes and nobles, and as such were adorned with pictures some well, some ill lighted. In this they are no worse than many of the specially designed galleries, so that it is easy to believe that a verdict might be given in their favour.

Passing from a large modern gallery, with all the pictures spread out along "the line" and looking woefully insignificant in relation to the size of the room, as in the City Museum, Amsterdam, it is unquestionably pleasant to turn to the suites of medium-sized and small rooms in which the pictures in Italy are placed, as, for instance, in the Uffizi and Pitti Palaces at Florence, the Barberini and Vatican at Rome. In all these so conscious are we that the palaces are only being used for their present purpose as a matter of expediency that the critical faculty lies dormant; we enjoy the pictures as well as the circumstances will permit us, and are thankful. The majority of pictures are well seen in strong side light. The gems of the collection are so arranged, being hinged to the wall on the side next the window, that they can be placed at any suitable angle. This is an excellent method of improving the lighting of the picture. A diagram (fig. 6) shows that if the picture is brought out to an angle of about 30° with the wall, it would receive about two thirds more light than when lying flat against it. Of course this is only an expedient for overcoming defective lighting, as also is the method of inclining the whole of the side walls of side-lighted rooms, as is seen in the

Gallery at Amsterdam and many other places. The pictures, it is true, are better lighted than when the walls are at right angle to the plane of the windows, but the arrangement is defective inasmuch as the back wall is still badly lighted, and none of the side pictures can be viewed without interfering with the view of other spectators. Angles are the most inconvenient places for seeing pictures, and by the small side-lighted room method we get a maximum of inconvenient positions.

Note.—Moreover, the space for viewing the picture free from the reflection is restricted to the space between the window and R. If the picture is flat against the wall the space is extended to R.

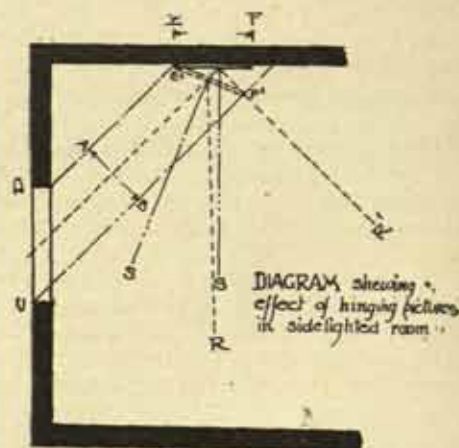


FIG. 6.—PLAN.

A method of lighting more scientific than the top ceiling light is that of the lantern light—that is, lighting by means of a row of vertical windows in each side of the central part of the roof, the roof covering of this central part being raised above the windows. In this way the light from each row of windows is thrown on to the opposite wall, with the result—if the angles have been properly studied—that the pictures are well lighted. This form of light can be seen in our own Exhibition Gallery, but here the fatal mistake has been made of glazing the central part of the roof also; a flood of light thus falls on the central part of the room, which is far better lighted than the walls, with the result that reflections are painfully dominant. The billiard room of the Canterbury Club, on the other hand, is lighted with a lantern light with a solid ceiling, the result being that the billiard tables, for which the room was designed, stand in the worst lighted part of the room, while the mediocre pictures which hang on the walls are excellently lighted. But this method, even when properly carried out, although an improvement on the top-lighting, is not entirely successful, for the central portion of the room is still too well lighted to prevent reflections, and the windows too far away from the pictures to light them brightly. For it must be remembered that it is the windows in

the right-hand side of the roof that by this method light the pictures on the left-hand wall, and *vice versa*. To be perfectly successful, therefore, the lighting must be so arranged that the windows on the right of the roof throw their fullest light on the pictures on the right wall, those on the left on the left wall. This can be effected by adopting what I have called the top side-light system. It may be carried out in various ways. I show one in which the width of the roof of the gallery is divided into three parts, the central part to have a flat or curved solid ceiling, while the side portions would be covered with a pitched roof with skylights in the inner slopes adjoining the central flat portion (diagram fig. 7).

rally perfect, and as architecturally magnificent as the funds will permit or the taste and skill of the designer dictate.

The depth of the bay from the corridor to the wall should be about 16 feet, so that the correct position for the seats may be within it. It will be

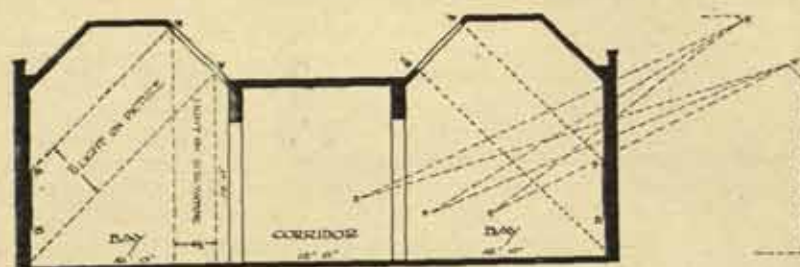


FIG. 7. CROSS SECTION
DIAGRAM TOP SIDE-LIGHTED GALLERY

This arrangement would allow the light to fall with full brilliancy on the outer walls, leaving the central portion in shadow. This central portion should therefore be formed as a wide corridor, and the outer portions be divided by partitions into wide bays. The partitions should extend to the roof of the bays so that the lighting in each bay may be independent. The ends of the partitions next the corridor would also be excellently lighted, and the pictures hung there could be well seen on passing along the corridor, as also could all the pictures on the outer walls, without entering the bays. By the division of the gallery into bays a large amount of extra well-lighted wall space is provided. The length of the bay would be determined by the limit imposed by the law of reflections. They may be narrower than this limit but not wider. Only one picture should be hung on the partition wall. If others were hung near the outer wall spectators would have to pass into the well-lighted area to see them, and reflections from illuminated objects would result. Moreover, spectators would thus interfere with the view of those seated. Pictures should never be crowded together, and this system provides double the amount of well lighted and suitable wall space than that provided by a rectangular room of the usual form. Pictures which in an ordinary room of equal area would have been placed frame to frame could here be displayed freely, and with vastly increased convenience and artistic effect. Seats should be placed just within the bays at the correct distance from the pictures so that those wishing to study the pictures carefully would, while seated, not be interfered with by those wishing to get merely a general survey of the gallery. The great fault in all galleries now is that the seats are placed in the centre and the corridor or thoroughfare is between the pictures and the seats. The arrangements here sketched, while being strictly in accord with the principles of lighting we have laid down, may be made structu-

found that 30° is the most suitable angle of vision for viewing a picture, and this gives about double the width of the picture as the best distance to see it from. Few pictures are more than 8 feet wide, so that a depth of 16 feet would suit the majority of the largest pictures. For smaller pictures the seats would be brought proportionately nearer or the depth of the bay diminished, and for larger pictures the depth of the bay would be increased. The very great advantage of an undisturbed view of the pictures from the seats must appeal to all, while the possibility of seeing all the pictures without blocking the view of those who are seated makes this arrangement one that should be followed in all galleries. It will be seen from the diagram of the section, fig. 7, that the light falling on the spectator when seated within the bay is four-tenths less than the light falling on the pictures, so that reflections of the spectators and illuminated objects would be impossible; and it will be seen that as the spectator approaches the picture into the well-lighted area for a close examination of its parts only his back becomes illuminated, and reflections even then cannot occur. In a gallery of the usual type, as seen in the sections given, it is the face of the spectator that is always more strongly illuminated than the picture.

I have said that this system of top side-lighting may be carried out in various ways. It is applicable to all usual forms of rooms. There are many instances in which a gallery for meetings &c. is the first consideration and the exhibition of pictures a secondary one. Hitherto the pictures have been the only sufferers from this dual purpose. There is no need for sacrifice for either purpose. A large assembly room can be brilliantly lighted, and yet be made quite suitable for pictures, as shown by my diagram, fig. 8. There is no need that there should be a violent contrast between the brilliantly lighted walls and the gloomy part of the room. It need never be gloomy. All that must be

demand is that the brightest light shall fall on the walls. The diminished direct light from the top side-light, and the reflected light from the

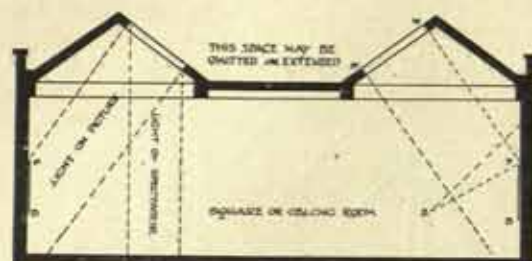


FIG. 6 CROSS SECTION

wall surfaces, will ensure a brilliancy of effect throughout. I designed a Municipal Assembly Hall on this principle some years ago.

It is of course desirable and generally demanded that museums and picture-galleries shall be used for no other purpose than the display of exhibits or pictures, and in that case the arrangement I have suggested is, I think, the best. It is as suitable for museums as for picture-galleries, for the laws which apply to glazed pictures apply with equal force to glazed show cases. Here again, if the principles are understood, all the cases of exhibits can be placed in relation to the light in such a way that there shall be no chance of their being converted into distracting mirrors. In our own museum and picture-gallery there are, I regret to say, examples of every kind of defective lighting, and I am not sure that we can regard the knowledge that they are no worse than similar institutions elsewhere as any consolation. I have referred to the defects of European galleries, and the museums are in nearly all cases equally bad. The most annoying effect of all is perhaps to be seen when horizontal glass specimen-cases are placed in a strongly top-lighted room. As long ago as 1883 I remember trying to study the minerals in such cases in the Natural History Museum of London. I met with but little success in this, but gained a deeply impressed knowledge of the details of the skylight. It is a magnificent building for which I have always had the greatest admiration, but I thought then, and think more firmly now, how much it is to be regretted that in a building of such architectural importance the first essential of the design should have been so neglected. Horizontal cases should be placed in brilliantly side-lighted rooms having windows on both sides. The cases should be at right angles to the windows and opposite to them.

Where side-lighting is used for vertical cases, they also should be placed in the same position and have glazed ends and tops. In both instances the spectator would therefore be standing in the shade of the wall between the cases, and the exhibits be well lighted.

A clear understanding of the simple principles

laid down is what is required for success. Anyone having this knowledge can put every design to an immediate test. There is no need to travel to see them—no need for wandering Commissions. If a design is either conceived or executed in accord with the laws of light, it is good; if not, it must of necessity be bad, and no expression of opinion about it will make it otherwise. Fortunately there are not any conditions which are likely to modify the actions of the laws of light. They will always act under every condition exactly as stated. The lighting of galleries is therefore, so far from being a difficult problem, one of the most simple an architect has to deal with. Very different is it with acoustics. In this science there are so many qualifying conditions almost impossible to determine, that while we are able to design a building in accord with the laws of sound, and thus ensure that it shall not be acoustically bad, still absolute success can never be predetermined. This is proved in the manufacture of violins. Two violins may be made with the same kind of wood and exactly similar in every respect, yet one may prove to be of incalculable value for its tone and the other valueless. The acoustic properties of rooms may vary in the same way, but not to the same degree.

In dealing with the laws of light nothing less than absolute perfection should be demanded in all cases, for if the lighting of our buildings is found defective in any respect, then the fault lies wholly in ourselves. There is not in any case the slightest excuse to be found for any degree of failure.

Knowledge of the laws, and the careful application of them, will enable us to fulfil after the lapse of years the editorial hope for a building which shall be "scientifically correct," and with the architectural skill in rational design which modern study has created we may confidently expect that such a building will also be "structurally perfect" and as "architecturally magnificent" as the circumstances demand and the funds allow.

Since writing the foregoing, I have received, and read with much interest, the paper, published in the JOURNAL for 13th April 1912, by Mr. Edwin T. Hall, to whom we are much indebted for bringing together so many examples and opinions on the subject. I have studied it and the discussion carefully in order to see what agreement our fellow architects in England have arrived at. By analysis of the expression of opinion of Mr. Hall, the opinion of the authorities quoted by him and of those who spoke at the meeting, it will be seen that we appear to be as far off any agreement as we were in 1907 when Mr. Weissman read a paper on the same subject.

On the question of lighting—the portion of the subject to which I have devoted my paper—there

seems to be hopeless disagreement even on matters of fact. Mr. Hall speaks very highly and quotes many opinions in support of side-lighting, and seems to infer that top-lighting is only adopted to enable greater wall space to be obtained, for he says: "The top-light in some form is so general and the convenience of being able to get a great amount of wall space for hanging on a limited site is so great that this system would always recommend itself for picture-galleries," so that we have here two reasons given for its continued adoption, namely, that it has been so often done before, and that it enables us to get a great amount of wall space. Yet a little further on he speaks with approval of top-lighted galleries on account of their excellence, and mentions those at Dulwich in these words: "Another form giving excellent results in an oblong gallery is a semi-circular or segmental roof with sloping side-lights divided by a flat plaster ceiling, or, in a square gallery, a centre skylight similarly divided by a flat ceiling, as in the Dulwich Gallery." He quotes an article in the *Times* which says: "Sir John Soane's method of lighting" (that is, the lantern-light shown in the sections) "is niggardly in a climate like ours. The difference between good and bad lighting is seen the moment we enter the new room." This opinion by the *Times* with reference to these rooms is exactly the opinion expressed by the *Architectural Review* with reference to the new rooms in the National Gallery which have been so strongly condemned. These rooms which Mr. Hall puts before us as examples to follow must of necessity be condemned, as they would produce, as can be seen by the sections, painful reflections in any glazed surfaces on the walls.

This is what inevitably must happen in every brilliantly but improperly lighted room. In the sections (fig. 16, page 404) of the Dulwich Picture-Gallery Mr. Hall has drawn lines at 45° on each section. In the left-hand section showing the new gallery they are drawn for the purpose of arbitrarily fixing the height of the skylight, and these lines are used in this and in the other sections for showing the amount of light which would fall upon the pictures from the lantern and ceiling lights. This is extremely misleading, as there is no reason whatever for attaching any greater importance to rays of light at 45° than at any other angle. Rays of light will pass through an opening glazed or unglazed at every angle. The greatest number of rays or beams of light will naturally pass through at right angles to the opening, and that portion of either wall or floor on which the beams fall will be the most brilliantly lighted, as shown by my diagram fig. 5. The number of beams will diminish as the angle with the opening increases. I have re-drawn the section of the Dulwich Gallery, fig. 9, and it will be seen that the greatest amount of light in this as in every other central top-lighted room, whatever the arrangement of the lights, falls upon the floor and

not upon the walls. The central flat solid ceiling referred to as forming a special feature in this gallery is of no value for the purpose of diminishing the light in the centre of the room. The diagram, fig. 9, shows that with the skylights at that angle the space below the flat ceiling where the spectators would be standing is the most brilliantly lighted part of the room, for the reason that the rays of light from both skylights are

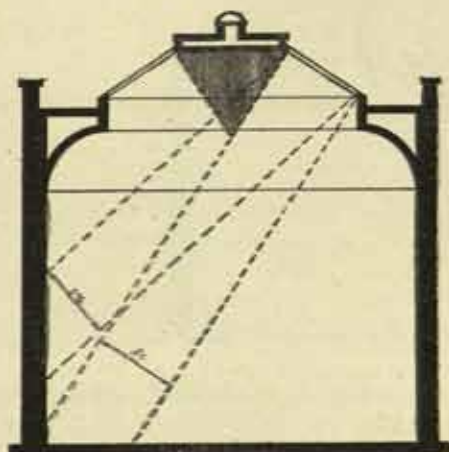
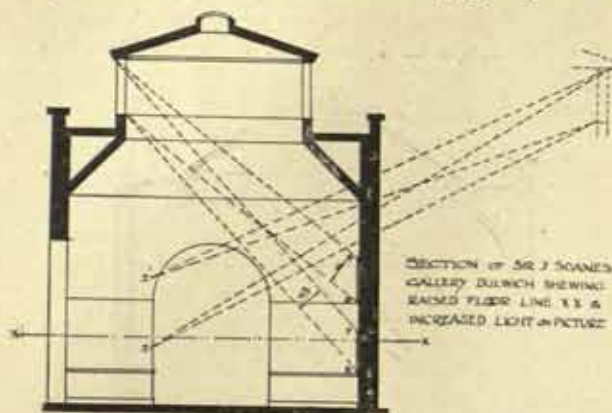


FIG. 9
SECTION OF NEW GALLERY DULWICH
SHOWING STRONGEST LIGHT ON FLOOR

directed towards it. This effect Mr. Hall himself has condemned in a previous part of his paper, and quoted as I had done the late Sir L. Alma-Tadema in support of his contention. Here again the brilliantly lighted room has been praised apart from any consideration of the lighting being suitable for lighting the pictures for the display of which the gallery was erected. The method adopted by Sir John Soane is certainly a much more scientific one than that shown in the new galleries. But the fault as shown in the section of Sir John's gallery is that the lantern lights are too high so that the best illuminated part of the wall is close to the top of it as shown by the lines I have placed on the re-drawn section, fig. 10. It will be seen by the illustration on which I have drawn a new floor line, *xx*, that the lantern light could be lowered six feet without any inconvenience resulting from the reflections of the light, and the pictures would in this case be fairly well lighted and reflections diminished but not obliterated. They would be much better lighted if the lantern lights were inclined as seen in the Waterloo Gallery at Windsor, fig. 11.

Mr. Weissman's opinion "that the lighting in the National Gallery is extremely well managed," quoted by Mr. Hall, is perhaps another instance of visitors wishing to be polite to their hosts, a practice which a German visitor to the Town Planning Conference so strongly condemned. He could not otherwise have praised this nor given unqualified

praise to the lighting of the Tate Gallery. Both were severely and rightly criticised during the discussion. In the Watts Room at the Tate Gallery I particularly remember it was absolutely impossible to see the picture placed at the end of the room by reason of the reflections of the skylight upon it.



This is only what a little thought would lead us to expect. In both Mr. Weissman's and Mr. Hall's papers only the cross sections and therefore only the lighting of the pictures on the side walls of the oblong rooms are considered, following in this the example of Captain Fowke. The lighting of the pictures on the important end walls is disregarded,



FIG. 11.

with the result that they reflect not only the objects in the "well-lighted" room in common with those on the side wall, but reflect as well the range of ceiling lights. If a longitudinal section were drawn it would at once be seen that the skylights distant from the wall must of necessity be wholly reflected in the pictures. This could be obviated by placing a screen or suspending a curtain across the room

from the roof to the level of the top of the walls a suitable distance from the wall.

The interior and section of the Mappin Art Gallery shown on pages 405 and 406 are extremely interesting. These were new to me (the one published in the *Builder*, 18th October 1886, referred to in my paper, is, I presume, the original design which Mr. Hall states was not carried into execution). The scheme shows a closer approximation than any others to the principles I have evolved and expressed in my paper, but the gallery cannot be wholly successful for three reasons: *First*, the outer skylight is too far distant and would reduce the amount of light falling on the pictures. This would be still further reduced by the translucent level ceiling light. With such an arrangement there can be no brilliancy of effect. *Second*, the level ceiling light would illuminate the spectator, when standing at the entrance to the bay, as brightly as the pictures. The Gallery of Honour in the Ryks Museum fails for the same reasons. *Third*, the distance between the columns of the nave and the wall on which the pictures are hung is too short for the reasons given in my paper. A reference to section, fig. 7, will show how I consider these faults may be overcome.

The necessity for a much deeper study of the question from a scientific standpoint is clearly shown by the contradictory opinions expressed not only by the authorities quoted in Mr. Hall's paper but also by those taking part in the discussion. These expressions of opinion would lead us to believe that the subject is a hopeless one. I trust I have succeeded in showing the direction in which our studies must lie if any advance towards success is to be achieved.

It would be of the greatest value if plans and sections of existing galleries were made showing the exact position and size of window and skylights and stating the kind of glass used. The relative amount and value of the light on the walls and floor of the rooms should be ascertained by means of photo-printing paper metre.

Note.—The Wynnes metre is the one I used, and if all observers used this kind the results could be compared. The relative value can be immediately seen by the depth of colour the paper reaches in different parts of the room in a given time. This is, as stated in my paper, the method I adopted in studying the European galleries, but time did not permit me to make the study as accurate or as full as it should be made. The value of the exterior light should also be noted.

I hope to forward you studies of galleries here, and the results of experiments with different kinds of glazing, and if others will make exact observations of galleries elsewhere we should have a collection of scientifically acquired data of existing examples among which there will be no room for differences of opinion, and the proof of the laws of light and their application will be accurately determined.

THE LATE MR. NORMAN SHAW, R.A.

The announcement of the death of Mr. Norman Shaw in Tuesday's paper must have come as a shock to all artists in this country. It had been known to his friends for some time that Mr. Shaw had been in failing health, but the gallant spirit with which he met his illness made it hard to realise that the end was at hand. It is the close of a great career in the fullness of age and honour.

We are yet too near to attempt to appraise the quality of his work, the extent of his influence on the development of English architecture. By the ready consent of all, he had long been looked up to as the leading spirit in English architecture, perhaps the most remarkable English architect since the days of Sir William Chambers; it will be for the historian, later on, to attempt to define more clearly his position in English art. But all who ever came into contact with Norman Shaw will remember his most fascinating personality, his genuine and chivalrous friendship, his kindness to younger men, and the extraordinary influence that he had in stimulating them to a high and worthy conception of the art of architecture. I first made Mr. Shaw's acquaintance as a student in the R.A. School thirty years ago. The subject set by him as visitor was a pedestal for an equestrian statue. On this I was labouring blindly when Mr. Shaw came round to criticise my design. In a few casual remarks, half humorous, half serious, he unlocked the gate of a new world of ideas, and completely altered my outlook on architecture. So always, any who came to him for advice went away with a sounder and a more sober estimate of their own achievements, and yet cheered on to persevere and pursue their own ideal.

Norman Shaw was an artist, absolute and ingrained. To scholarship and learning he made no claim, but he possessed a mind of rare distinction, a shrewdness and clarity of intelligence that illuminated the darkest corner of any difficulty, made everything seem delightfully simple and easy, and did in fact suggest the way out to those less favoured than himself with resource and quick imagination. A man who disclaimed any powers as an orator or writer, he was in fact an admirable speaker, and few men have ever written more charming and characteristic letters. He handled every subject with an inimitable lightness of touch, letting his humour play on it, yet never losing sight of the essential purpose of his writing. To borrow a term from horsemanship, he had beautiful hands.

There has been a singular completeness about the career of this most distinguished architect. An

artist, and always an artist, he was indifferent to honours (I believe I am right in saying that he declined a baronetcy). He was equally indifferent to society in the technical sense. His whole power was concentrated on the art that he loved and to which he dedicated his life; and from the ideals that he formed in early life he never swerved. It has been a fine life: finely conceived and finely lived.

REGINALD BLOMFIELD.

Frognaal, Hampstead:
20th Nov. 1912.

Richard Norman Shaw was born in Edinburgh in 1831, and received his general education in that city. He served his articles with William Burn, and on coming to London entered the Royal Academy Schools, where he obtained the Gold Medal in 1853 and the travelling studentship in the following year. In 1860 he became an Associate of the Royal Institute, but resigned his membership in 1868. After acting as assistant, first in the office of Anthony Salvin and afterwards with George Edmund Street, R.A., he was for some time associated in practice with W. Eden Nesfield. He was elected an Associate of the Academy in 1872 and a full Academician in 1877. In 1858 he had published his folio book *Architectural Sketches from the Continent*, a series of exceedingly fine drawings from cathedrals and other ancient buildings, drawn on stone by himself. To quote the interesting memoir in the *Times* of last Tuesday:

No one who knew Norman Shaw mainly by his later work would, on a mere inspection of these drawings, connect them with his name. It was only a year after their publication that a building, under the name of New Zealand Chambers, showed its frontage in Leadenhall Street, and gave the first outward indication of the real Norman Shaw. By the practitioners of architecture of the ordinary types, Classic or Gothic, it was received with a kind of bewilderment. They had never seen anything like it before. In the ground story symmetry of arrangement was discarded in a quite indecorous manner. Above the ground story four great brick piers went straight up, between which the wooden window-bays were played with, and a curved-out cornice with elaborate surface decoration in plaster projected over the piers. The details were suggested by late English classic—what was afterwards to be called "Queen Anne" work; and yet as a whole it was essentially Gothic in feeling, and showed that the architect had not been sketching mediæval work for nothing. Instead of a wall with windows in it, it was like the nave wall of a late Gothic cathedral, a series of buttresses which formed the structural portion, and between which the space could be treated as one pleased. This front, not very large, did much to fix its author's reputation, for it was one of the most startling outbreaks of architectural originality of which there is record in modern London architecture, and showed that its author was an architect who had his own way of handling materials, and who had, moreover, grasped the fact that architectural expression depends largely upon the treatment of structure, and not on the scenic addition of features supposed to be architectural.

It was, however, his domestic work that brought him prominently into note, and for many years the most interesting exhibits in the Architectural Room at the Royal Academy were the fine bold pen-line drawings from his own hand of one or other of his picturesque houses in town or country. Among the finest of the latter may be mentioned Cragside, in Northumberland, built for Lord Armstrong; Dawpool, in Cheshire; Chesters, in Northumberland; and Adcote, in Shropshire. Lowther Lodge, designed in 1874; Swan House, Chelsea, in 1877; houses in Cadogan Square in 1878, the corner house, 170 Queen's Gate, and his designs for the Piccadilly Hotel and the rebuilding of the Regent Street Quadrant, in 1906, are among the most striking examples of his London work. To quote the *Times* again: "In the large block of mansions close to the Albert Hall, where no great expenditure on architectural effect could be allowed, he nevertheless managed to give variety and some architectural expression by recessing portions of the exterior wall and grouping some of the windows under arches; the device is simple and inexpensive, but it has its effect."

Among ecclesiastical works, probably his designs for St. Michael's Church, Bournemouth, and St. Margaret's, Ilkley, are the best known. He also designed a good many public or semi-public buildings, such as the Alliance Assurance Office at the corner of St. James's Street and Pall Mall, the Central Offices of the Metropolitan Police, and Parr's Bank, Liverpool. New Scotland Yard, the most notable and the most generally admired of all, was made the occasion for a political attack on the then Chief Commissioner of Works. Sir William Harcourt's reference to it in the House of Commons that among new public buildings "the most recent is the least decent" provoked an instant and warm defence of the building by Mr. Walter Cave, Mr. Walter Crane, and Sir Wm. Richmond; and later Mr. Shaw was gratified by the publication of a common letter of protest and high approval from a large number of architects and other artists.

Of late years his advice had been sought by the Government and by the London County Council on various matters connected with London architecture. The question of the rebuilding of the Regent Street Quadrant, on which he was consulted by the Department of Woods and Forests, has already been mentioned. He also worked out the plan of a large scheme for the remodelling of Piccadilly Circus as a more extended place in rectangular form.* It is hoped, for the credit of London, that this scheme may ultimately be carried out. He assisted the London County Council in adjudicating on the merits of the tentative designs submitted by the group of selected architects for the architectural treatment of Kingsway and Ald-

wych, and refused any fee for the work, saying that he was only too happy to assist a public body desirous to improve the architecture of London. Unhappily nothing came of the competition and the scheme has fallen through.

Mr. Shaw was joint editor with Mr. T. G. Jackson, R.A., of the series of Essays on the Qualifications and Training of Architects, published in 1892 under the general title "Architecture: a Profession or an Art." His own contribution to the volume dealt with "The Fallacy that the Architect who makes Design his first Consideration must be Unpractical." It is, perhaps, open to doubt whether such fallacy ever existed; but most people will agree with Mr. Shaw's contention that "A true architect is far more likely to be a practical man, than a practical man to be a true architect."

Mr. Shaw passed away on Sunday the 17th November, after a long illness. The funeral service took place on Thursday at Hampstead Parish Church and the interment in the adjoining churchyard. Among those present at the funeral ceremony were Sir E. J. Poynter, P.R.A. [H.F.], Sir Aston Webb, R.A. [F.], Sir Wm. Goscombe John, R.A. [H.A.], Mr. Frank Dicksee, R.A. [H.A.], Mr. T. G. Jackson, R.A., Sir Ernest George, A.R.A. [F.], Mr. Ernest Newton, A.R.A. [F.], Mr. Leonard Stokes [F.], Dr. Burnet, A.R.S.A., Mr. Gerald Horsley [F.], Mr. W. R. Lethaby [F.], Mr. Mervyn Macartney [F.], Mr. Halsey Ricardo [F.], Mr. Edward Warren [F.], Mr. Wm. Woodward [F.], Deputy Mayor of Hampstead, several other members of the Institute, and Mr. Ian MacAlister, Secretary.

Publishers' Announcements.

The Cambridge University Press announce that they will publish very shortly *Byzantine and Romanesque Architecture*, by Mr. T. G. Jackson, R.A. This work, which will be in two volumes will contain an account of the development in Eastern and Northern Europe of Post-Roman architecture from the fourth to the twelfth century, with more than 300 illustrations, mostly from the author's sketches. It is attempted not merely to describe the architecture, but to explain it by the social and political history of the time. The description of the churches at Constantinople and Salonica, which will have a special interest at the present moment, is followed by an account of Italo-Byzantine work at Ravenna and in the Exarchate, and of the Romanesque style of Germany, France, and England.

Mr. B. T. Batsford will publish in a few days Mr. L. A. Shuffrey's long-promised work on *The English Fireplace and its Accessories from the Earliest Times to the Nineteenth Century*. He will also issue *Old Houses and Village Buildings in East Anglia*, by Basil Oliver [A.], forming the fifth volume of his well-known "Old Cottage" series. Both volumes will be fully illustrated by collotype reproductions of photographs of the most interest examples, accompanied by numerous sketches and measured drawings.

* Illustrated in the *Transactions of the Town Planning Conference*, 1910, p. 756.



9 CONDUIT STREET, LONDON, W., 23rd November 1912.

CHRONICLE.

Preservation of Ancient Monuments: Recommendations of the Joint Committee.

The Joint Select Committee of the House of Lords and the House of Commons on the Ancient Monuments Consolidation and Amendment Bill (House of Lords), the Ancient Monuments Protection Bill (House of Lords), and the Ancient Monuments Protection (No. 2) Bill (House of Lords) have issued their report. The Committee express the opinion that the Ancient Monuments Consolidation and Amendment Bill (House of Lords) should alone be allowed to proceed. They recommend that all monuments placed under the Commissioners of Works, or the council of a county or county borough, or the equivalent authorities in Scotland under Part II., and all monuments coming under Part III., should, under ordinary conditions, be exempt from any liabilities for probate or death duties. The machinery provided for the protection of ancient monuments is said to be too cumbrous, and the Committee recommend that a more rapid procedure be adopted. In any case provision should be made in cases of emergency, especially when Parliament is not sitting, that prompt action should be taken. Again, in the case of an ancient monument declared by the Commissioners of Works, on the recommendation of the Advisory Board, to be a monument of national importance, after an opportunity has been given to the owner to be heard, the consent of the Commissioners of Works should be obtained before any structural alterations are taken. All such monuments should be exempt from probate and death duties. The Committee consider it most important that churches now used for public worship should be protected in the preservation of their architectural and historic interest, especially when faculties are applied for in order to restore, alter, or repair them. The hope is expressed that the Bench of Bishops may take this matter under early consideration with a view to taking collective action. It is suggested, however, that, in all cases where a faculty is asked for, a public advertisement in the principal papers of the diocese should be published, with a notice that the plans may be

examined in the Diocesan Chancery, and a reasonable interval should be allowed for criticisms to be sent to the Chancellor. Whenever serious criticisms are made the Chancellor should secure the advice of a small committee—say three competent architects of repute—and due regard should be had to their report, such report and the final form of the faculty being made public. Although the Committee's recommendations as to churches only apply to England and Wales, they think that suitable provision in accordance with Scotch law should be made to protect historic ecclesiastical buildings of Scotland. Cathedral churches should be placed in a different category and should not be exempted from the operation of the particular clause. The Committee are strongly of opinion that such movable property as plate and other articles of historical and artistic interest as belong to a municipal corporation or to the Established Church should be subject to similar protection. In conclusion, the Committee suggest that a separate advisory board should be appointed for Scotland and for Wales, and that sufficient inspectors be appointed to visit periodically and to report on the condition of ancient monuments in their districts. The Committee also express a strong opinion that a special department in the Office of Works should be organised.

Old Cottages, Woodlands' Farm, Guildford.

The Records Committee desire to call the attention of architectural students to the contents of the following letter addressed to the Secretary of the Institute from the Society for the Protection of Ancient Buildings:—

11th November 1912.

DEAR SIR,—This Society has been trying to save from demolition the above-named very interesting old cottages, which are the property of the Guildford Town Council. The Council has, however, decided to pull them down, and, on hearing this, my Committee wrote to the Town Clerk suggesting that drawings and photographs should be made of the fine old oak staircase &c., so that a record might be kept. The Town Clerk (Mr. A. D. Jenkins) informs me that there is no objection to this, and my Committee wishes me to ask if you could bring the matter to the notice of your students in the hope that one of them might be ready to make measured drawings of the place. The Town Clerk asks to be informed when anyone goes, and, writing on the 2nd instant, says: "We shall not be pulling down the cottages for a month at any rate."—Yours faithfully,

A. R. POWYS, *Secretary*.

Stafford House.

Sir William Lever, Bart. [*Hon. F.*], has purchased Stafford House from the Duke of Sutherland, with the intention, it is said, of devoting it to some public or national purpose. Stafford House,

which stands next to St. James's Palace and facing the Green Park, occupies partly the site of the library built by Caroline, wife of George II., and partly that of Godolphin House. The house was built for the Duke of York, the second son of George III., according to the designs of Benjamin Wyatt. The Crown lease was sold to the Duke of Sutherland in 1841 for £72,000. Sir Charles Barry was the architect of the upper story, which was added by the Duke of Sutherland, and Barry was also responsible for the modelling of the interior. The staircase is a very fine one, and the great dining-room has been described as "worthy of Versailles." The Sutherland Gallery is a magnificent room 136 feet long by 32 feet wide.

The San Francisco Exhibition.

Mr. W. D. Caröe, F.S.A. [F.], writes to *The Times* from San Francisco under date 1st November:—

Having been afforded the opportunity of examining in detail the scheme and plans for the great Exhibition projected here for 1915, and having visited the site, some notes written from the spot upon the subject may not be unacceptable. A preliminary competition was held before the site was finally selected, and that now chosen could hardly be surpassed, with its water front upon the renowned fairway known as the Golden Gate.

The general scheme of buildings is already approved, subject only to the working out of minor details. It has the novelty of being conceived in courts rather than independent blocks, and bids fair to be really monumental in character. If adequate in achievement, it promises to surpass any exhibition hitherto attempted, not even excepting Chicago. Architects will be interested to know that what has justly been called the "gingerbread" of exhibition design, known so well by all of us, is being studiously avoided, and a classic dignity sought in its place, and certainly achieved on paper in the designs I have seen.

The means of carrying such a scheme, upon a colossal scale, to a successful conclusion are peculiar to this country. One learnt with amazement that £1,000,000 (not dollars) was guaranteed by the citizens at the first meeting of the project, and that ten times that amount is likely to be at their disposal before the actual construction begins, every State in the Union and the Federal Government itself being contributors.

There is, however, the keenest desire expressed to make the occasion international, and specially that Great Britain should come forward in a manner worthy of her position in the world of commerce and the arts. Several admirable suggestions have been made to me as to the form which a British architectural court or pavilion might appropriately take, but it is obviously premature to enter into such details.

Sheffield as an Architectural City.

Some interesting suggestions relating to the architectural improvement of Sheffield were made by Mr. W. S. Purchon [A.] in a lecture on "Beauty in Architecture," delivered to a large audience at Sheffield University last Saturday. The lecture was one of a series of "popular" lectures open free to the public. Mr. Purchon, who illustrated his subject with some of the finest examples of architecture, dealt exhaustively with the impor-

tant qualities to be observed in architecture, such as unity of composition, points of concentration, symmetry, proportion, and scale, restraint of ornament, and sculpture, the use of materials, and the necessity for buildings to be true and genuine and suitable to their environment. What should be their relationship to architecture, he asked; was it something about which they should read, or travel long distances to see? Was it not rather that which they, as dwellers in a city, should see all about them, in their public buildings, shops, factories, and even in their homes? It might perhaps be difficult to light the lamp of beauty in the peculiar atmospheric conditions which prevailed in a manufacturing city. But he had heard it suggested that the atmosphere of Sheffield could be improved, and he should not be surprised to find that that was not beyond their skill in these days of engineering efficiency. Would it not be worth much to them if Sheffield was really a beautiful city—a city free from shams and ugliness; a city in which all the streets and buildings were pleasant to the eye and mind? Was it an impossible ideal for Sheffield to become a beautiful city? It was not impossible. It needed, chiefly on the part of the people, a great love of, and a great desire for the beautiful. When they as a people were as interested in the beauty of their buildings as they were in sport they would not tolerate ugly cities, and street improvements would no longer be considered only as problems concerned with traffic and the provision of sewers and water mains. The builder of a private house would remember that it was not only for the comfort of himself and his family, but that it was something which would give either offence or pleasure to countless passers by. That state of things was slowly but surely coming. Already people were becoming interested in such questions as town-planning and the provision of garden cities, and incidentally in beautiful buildings.

Architecture and the Public.

It has often been insisted on in this JOURNAL that in none of the arts is a correct judgment on the part of the public more necessary than in that of architecture. The suggestion was made here a few years ago [JOURNAL, 26 Sept. 1908] that the daily paper, by the occasional admission into its columns of competent criticism of architectural work, might be a powerful auxiliary in awakening public interest in the architecture of our cities. It is comforting to think that there is a possibility of the daily press coming round to this view. Mr. Harold Begbie writes in the *Westminster Gazette*:—

The only art which is of daily concern to mankind, which is also in the estimation of some the supreme art of human genius, suffers an almost complete neglect in the daily newspaper. Critics exist to tell us what novels we should read, what poet we should ignore, what music we should admire, what pictures we should talk about; but in no regular department of the newspaper do we find a criticism of architecture telling us

what houses we should live in and what cities we should build. . . . The subject is one which the public never considers because it is never presented.

This neglect by the newspaper is of very considerable seriousness. It means that there is no public opinion behind the good architect, no education in the public mind as to what is good architecture, no public indignation against the bad architect and the bad builder. It means that the art which of all arts can do the most injury to the greatest number is left without the least restriction of public opinion to be degraded in the hands of ignorance and greed. Painters may produce stupid or vulgar pictures without injury to the eyes of refinement; novelists may publish vapid or tiresome stories without damaging the soul of understanding; musicians may compose ridiculous or blatant songs without offending the ears of taste; from all these things—even without critics to warn us—we can escape very easily and live in goodly ignorance of their existence. But a bad architect by one bad building may make a whole city foolish and laughable, or, what is certainly much worse, he may entirely ruin a country-side of rare and exquisite beauty. . . .

One has only to go about the country for a few weeks to perceive the dreadful danger of this public apathy. In spite of a new and noble spirit among the younger architects of the day, in spite of the many beautiful houses which are now being built by these gifted and earnest men all over England, one sees that the triumphant march of the bad architect, with his cheap red bricks and his cheap slates, or the ignorant architect, with his unrestful and self-conscious effort to be interesting or impressive, is in no wise challenged or impeded.

One is inclined to wonder whether posterity will not ask us why we made such a tremendous pother even about the Insurance Bill and the Bill for Irish self-government, and said not a word, raised not a finger, to hinder the irreparable destruction of our lovely hills.

The motor-car is bringing home to the minds of men the frightful extent of this ruin. There is scarcely a town in the whole land the approaches of which are not as dull, as repellent, and as mournful as the slums of old cities. To escape from London into the country means that a man must run the gauntlet of misery and vulgarity, of shabbiness and impudence, for several miles; and to enter almost any beautiful old city in the country means that he must make his way through destitution and priggishness, through squalor and ostentation, for a dreary and depressing league or two.

The one question which concerns us is how we may best arrest this deadly movement of devastation.

My proposal is that newspapers should somewhat clip the Icarian wings of their music critics, their dramatic critics, and their art critics: should tell the public that musicians, playwrights, and painters are not of daily importance: and that in place of all this diurnal criticism of the second-rate and the negligible, they should devote their passion for better things to the art of architecture.

The Indian Master Builder.

The Annual Report on Architectural Work in India for 1912-1913, by Mr. John Begg [F.], Consulting Architect to the Government of India, affords a valuable and very interesting exposition of matters architectural in the various Provinces of India. The work is divided into two parts, Part 1 consisting of a General Review by Mr. John Begg, and Part 2 of details of works carried out under the

direction of the various Consulting Architects, supplemented with full-page plans and photographic reproductions of some of the chief works. Among the latter may be mentioned the New Secretariat, Calcutta (architects, Messrs. J. Ransome and John Begg); extensions to the Indian Museum, Calcutta (Mr. H. A. Crouch, architect); Calcutta Medical College, Poona Agricultural College, and Government Press, Dacca (Mr. John Begg); the Throne for His Imperial Majesty, the Tata Memorial, and the Government House, Bombay (Mr. G. Wittet, architect); New Council Chamber, extension to P.W.D. Secretariat, and the Coconada Chamber of Commerce, Madras (Mr. W. H. Nicholls, architect); Medical College, Lucknow, and Daly College, Indore (Colonel Sir S. Jacob, K.C.I.E., architect); Muir College, Allahabad (Mr. F. O. Oertel, architect).

Mr. Begg has something to say about the employment of native talent in the design of buildings for the new capital of India. Under the heading "The Indian Master Builder," he says:—

A curious question of the greatest interest to architects in India, and particularly to those in Government service, has been raised by a correspondent in *The Times*. This gentleman's contention was that the "Indian master builders," whom he represents as a race of traditional artists hitherto undiscovered by us, were the most suitable men for Government to employ on the design of buildings for India, and his plea was to the effect that these men should be sought out and employed on the buildings of new Delhi. He further contends that our policy in India has been such as to tend to the extinction of this race of artists, and insinuates that if we do not produce some of them in answer to his challenge it will prove either our Philistine objections to true art, or else that we actually have succeeded in killing out "the master builder." He has taken his stand in such a position that whether we produce a master builder or not he will claim victory either way.

Now if it should prove to be true that native Indian architectural art has died under our rule, I think it is very doubtful whether we should be blamed for it. Only art with little vitality could be killed by Government's letting it alone, which is all we are accused of doing. It must be unworthy to live if it cannot survive the want of direct Government patronage. No great art anywhere has had Government patronage. Individual patrons may have been members of Government—kings and emperors even—but it is owing to their own personal qualities, and their own private purses, or else their autocratic access to State moneys, that they have been effectual patrons. Does *The Times'* correspondent suggest that we should have employed public funds to bolster up the moribund art? I fear the Finance Department would have had a word to say about that. Surely Government's duty with regard to Public Works is limited to supplying legitimate buildings in a sound, economical, and business-like manner. All this means that the buildings must be well and artistically designed, in the truest sense; but it does not mean that public money should be expended in providing artificial props to an art that has not sufficient life in it to survive without such official aid. Indeed, art is so tender and elusive a thing that I fear such a hot-house system would only have hastened its death, or, what amounts to the same thing, would have

turned it into something which is not art. British officials as individuals have not been so wealthy as to justify their indulging in that "sport of kings," the patronage of architecture. They have had other matters than art to attend to, and it does not appear that they have attended to them badly. However, in the official architects who are now being steadily, if slowly, drafted into the service of the Public Works Department, we have a class of official who is chosen for artistic qualifications, and I am not without hope that under their guidance Indian art may yet be built up anew. But, as it will be living art and not dead antiquarianism, it does not follow that it will please everybody when it is built up anew.

The Times' correspondent (to whose views I should not have given so much space but for the fact that they have attracted wide attention, and, I believe, have occasioned some misapprehension in India) has lately moderated his plea. He asserts that certain official experts have declared the master builder to be a figment of his imagination, with the inference that the wish is father to the thought. I hasten to say that the architects of the Public Works Department are not of the numbers of such. Whom have we had to depend on for the carrying out of our work but Indian master builders and craftsmen? If there are more of these to be found and of better quality, we shall be only too glad to hear of it; and if there are higher uses to which they can be put, we shall be only too happy to employ them. Our bitterest complaint is of the poor quality of the class of assistance we are given in the country, both in our drawing offices and on the works.

Our critic's further plea is that the architecture of Delhi should be "Oriental in character or intention." No one can object to that, though I would remark that it conveys a different meaning from the antiquarianism which seemed to be revealed by his former letter. I would put it that—leaving the term "style" out of account, for that, as ordinarily used, is but a mode of archaeological classification—the architecture of new Delhi should be "in keeping with" the old in so far as that is possible while it is also in keeping with modern official life. To produce such a result we shall require the best and most sympathetic efforts on the part of the architects, and the assistance of the best draughtsmen and craftsmen whom the country produces.

There is one unfortunate circumstance of our building administration which I am surprised our critic has not alluded to—I mean the fact of the capture of certain of the building trades of Bengal by the Chinese. It is hard to think how this can be changed, but every one who would see the crafts of India on a sound footing must wish it to be changed. They are fine workmen, these Chinese, but it is difficult to see that their presence is not helping to drive more nails into the coffin of Indian craftsmanship.

Defective Roofing-Tiles.

The Science Standing Committee invite members of the R.I.B.A. and others interested to forward particulars of instances of defective roofing-tiles which have come to their notice. It is desirable where possible that such particulars should be accompanied with samples of such defective tiles, with any remarks upon the nature of the defects and their cause, also giving information as to the make of the tile, i.e. hand-made or otherwise, with its place of origin, and any remarks upon the nature of the material from which the tiles were made.

Waterproof Concrete.

Some tests carried out by the United States Geological Survey and the Bureau of Standards on Portland cement in order to determine its permeability to water show that the concrete is less permeable in the case of mixtures rich in cement, and that the permeability increases with age. The permeability, however, is not dependent entirely on the quantity of cement used, but is also affected by the ratio of coarse to fine aggregate employed, for concrete made with a sand containing a large percentage of fine materials was less permeable than that made with larger particles. In general the experiments have shown that Portland cement mortar and concrete may be made practically waterproof at any hydrostatic head up to 40 feet without the use of any "integral" waterproofing materials, of which about 40 different kinds, purchased in the open market, were tested. But in order to obtain such impermeable concrete considerable care should be exercised in selecting good materials as aggregates and in proportioning them in such a way as to obtain a dense mixture which shall be sufficiently wet to enable it to be puddled and to allow the particles to flow in position without being tamped. The addition of waterproof compounds does not compensate for lean mixtures, for poor materials, or for inefficient mixing, nor do they have much effect on permeability. None of the compounds reduced the absorption materially before the samples were dried by heating at 212 deg. F., but some did decrease the absorption after the samples were so dried. None seriously affected the compressive or tensile strength in the quantities used in the tests, but the addition of inert void fillers up to 20 percent. of the volume of the cement increased the compressive strength.

The A.A. Conversazione.

A special feature of the Architectural Association Conversazione, held on Thursday the 21st, was the Exhibition of Prints and Drawings of Old and New London which had been arranged in conjunction with the London Society. As it is understood that this collection, with a large number of other drawings &c. lent for the occasion, will be on view for a few days longer, members who were not present on Thursday would do well to call and see them. The London Society Exhibition was in three sections, dealing with (1) the River Thames and its approaches; (2) St. James's Park and the Mall; (3) Regent Street. Illustrations of schemes for the improvement of London were included. The Conversazione was, as usual, admirably organised, and with the music and exhibits and the meeting of friends a very agreeable evening was passed by the numerous company present. The guests were received by the President Mr. Gerald Horsley, and Mrs. Horsley.

The Architects' and Surveyors' Approved Society.

The membership of this Society now amounts to about 1,600, a strong representative committee has been appointed, and it is confidently anticipated that the Society will be in every way a success. As already announced, the President R.I.B.A. has consented to act as President of the Society for the first year, and it is hoped that next year the President of the Surveyors' Institution will accept the position, the idea being that in future the office should be held alternately by the Presidents of the two bodies. The total cost of organising the Society has amounted to £200, an expense incurred almost entirely for printing, postage, and circularising. The committee, considering it undesirable that the Society should start encumbered with debt, have approached the institutions concerned with a proposal that the debt should be cleared off by the R.I.B.A. and the Surveyors' Institution contributing £80 each, and the Architectural Association and the Society of Architects £20 each. These amounts were arrived at by taking into consideration the membership of the respective bodies. It is understood that this arrangement has been agreed to, and the Council of the Institute at their meeting last Monday voted the Institute's contribution of £80. The Council of the Architectural Association have granted for the first year the use of an office rent free, with permission to hold meetings in the A.A. rooms.

The Use of English Timber: A Correction.

In the report of Mr. Ernest Flint's remarks at the Conference of the Science Standing Committee with the English Forestry Association, published in the last number of the JOURNAL, a correction is required in the opening sentence of the second paragraph on page 31 so as to read: "Mr. Flint asked to see a specimen of, say, *Pinus sylvestris* grown at home, as a sample of what could be produced and was sought to be placed on the market. He pointed out that English-grown timber, unlike that imported from abroad, is too quickly grown, was consequently too open in the grain, and was therefore not suitable for joiners' work."

The Shakespeare Memorial at Stratford-on-Avon.

In the obituary notice of Mr. W. F. Unsworth which appeared in the JOURNAL for 19th October mention should have been made of the fact that Mr. Edward J. Dodgshun [F.], of Leeds, was associated with Mr. Unsworth in his first success in the competition for the Shakespeare Memorial at Stratford-on-Avon.

New Councillors of the City of Westminster.

The following members of the Institute have been elected Councillors for the City of Westminster:—Messrs. George A. Hall [F.], Howley Sim [A.], Leonard Stokes [F.], and William Woodward [F.].

THE EXAMINATIONS.

The Final: Testimonies of Study: Subject V.

The designs submitted in Subject V. by the students mentioned below who are entering for the Final Examination have been approved by the Board of Architectural Education:—

(a) DESIGN FOR ART GALLERY.—H. Charlton Bradshaw, J. Carey, A. D. Clare, G. Davidson, A. E. Davidson, N. S. Dixon, W. E. Foale, E. Gee, F. Jenkins, T. T. Jenkins, S. Stevenson Jones, F. O. Lawrence, B. A. Miller, N. Bewboulton, A. N. Shibley, S. Soper, A. Thomson, W. H. Thompson, A. Wilson.

(b) DESIGN FOR A VILLAGE CHURCH.—H. R. Atchison, P. D. Bennett, Allan L. Freamer, H. J. Higgs, Robert M. Love, E. A. L. Martyn, F. James Maynard, A. Nisbet, A. J. Sparrow.

The Statutory Examinations: Building Surveying.

An Examination of candidates for the Office of District Surveyor under the London Building Act (held by the Institute pursuant to section 140 of the Act) and of Building Surveyor under Local Authorities took place on the 24th and 25th October. Seven candidates attended (six for the District Surveyors' and one for the Building Surveyors' Examination), and the following four passed and have been granted Certificates of Competency to act as District Surveyors in London, viz.:—

SIDNEY WALTER BENSTED [A.], Rosdene, Gloucester Road, Kingston Hill, Kingston-on-Thames.
BENJAMIN CHAIKIN [Licentiate], 47 White Lion Street, Norton Folgate, N.E.
JOHN DOVASTON [A.], 14 Madeley Road, Ealing, W.
LAWRENCE ALEXANDER DAVID SHINER [A.], 7 Adam Street, Strand, W.C.

OBITUARY.

The late George Enoch Grayson.

George Enoch Grayson, of Egerton Park, Rock Ferry, Cheshire, who died on the 7th November at the age of seventy-eight, was elected a Fellow of the Institute in 1886, and had served on the Council and on the Practice Standing Committee. He was a past President of the Liverpool Society of Architects. Mr. John Woolfall [F.], of Liverpool, has kindly contributed the following notes of his career:—

Mr. Grayson started his apprenticeship about 1852 under Mr. Sayle, an architect, partner in the firm of Haigh & Co., builders, Liverpool. An active and keen business man, whatever calling he had adopted he would have pushed it to success. He was a Churchman in religion, but took no active part in politics. He was best known in his native city by his extensive practice, which reached very large dimensions, and the following list compiled from memory will give some insight into the variety of the work he was engaged in, which was

as complex as it has ever been the lot of one man to grasp and carry out.

Churches: Ditton, Lancashire; St. Silas, Toxteth; Emanuel and St. Ambrose, Liverpool; Allerton Memorial Church; Woolton Parish Church; St. Mary's, Liscard, and Wallasey Cemetery and Chapels; St. Faith's, Crosby.

Office Blocks in Liverpool: Scottish Provident, Scottish Equitable, Queen Insurance and Arcade, British & Foreign Marine Insurance, Standard Marine, Edinburgh Life Assurance Co., 14 Castle Street, 28 Castle Street; Leylands Bank Buildings, Victoria Chambers, Castle Street; Old Castle Buildings, Preesons Row; Alexandra Buildings, James Street; Redcross Chambers, Redcross Street; Union Bank Buildings, Fenwick Street; Head Office (or Bank of Liverpool; Victoria Street Branch for same Bank; Union Bank, Bold Street Branch; Park Road Savings Bank; and Scotland Road Savings Bank.

His public buildings include the Mersey Tunnel Stations at James Street, Liverpool, and Hamilton Square, and Central, Birkenhead; the enormous Grain Storage at Bootle, the Annexe at the Rainhill Asylum for 1000 patients; Cold Storage and Ice-producing Works, Williamson Square; Works for Messrs. Allen & Co., steamship owners; Warehouse on the Thames for Carron Co.; ferry approaches and buildings connected with the Seacombe Ferry, Cheshire; buildings and ferry approaches to the North Shore flour mills; and buildings and ferry approaches to Messrs. Blackledge, Cleator Moor Offices and Market; Concert Hall, Liscard; and City Liberal Club, Walbrook, London.

Schools: Emmanuel Church School, St. Peter's, Sackville Street; several for the Liverpool School Board; and additions to Trinity Hall, Cambridge.

Some of the principal residences carried out by him are Bidston Court, Thornton Manor, Whitwick Manor, House for Sir Reginald Hardy, rebuilding Irton Hall, Cumberland, Kilhow, Cumberland, and others around Liverpool almost innumerable.

When to all this is added surveys, valuations, alterations, and additions to existing buildings of all kinds, it will be generally agreed that it makes a total worthy of a busy life.

Charles Henry Rew, who died on the 4th October, at Great Berkhamsted, where he had practised for nearly thirty years, was elected a Fellow of the Institute in 1905. He was born in Exeter in 1842 and came of an old Devonshire family. He served his articles with the late Thomas Whitaker, Architect and County Surveyor in Exeter, and subsequently entered the office of the Town Surveyor of Brighton, the late P. C. Lockwood, and was with him when the drainage scheme of Brighton was carried out. Leaving Brighton he was for some years in the office of the late George Edmund Street, R.A., and worked on the Law Courts, Christchurch Cathedral, Dublin,

Bristol Cathedral, and other well-known ecclesiastical buildings. He afterwards practised for a time in London and in 1884 removed to Great Berkhamsted. Many important local buildings were carried out from his designs, among them the Chapel at Berkhamsted School, the Science School, and other extensions to the School buildings. He also designed the Homes of Saint Barnabas, East Grinstead, the Swimming Bath at St. Paul's School, Hammersmith, a number of houses, and interior work for various Hertfordshire churches. Latterly, in conjunction with his son, Mr. Noel Rew (*Licentiate*), he designed the Dean's Hall, new Junior School and Sanatorium for Berkhamsted School, the Smith Dorrien Memorial at Berkhamsted, and All Saints Church, Berkhamsted.

Votes of Condolence.

At the General Meeting last Monday Mr. E. Guy Dawber, *Vice-President*, who is acting as Hon. Secretary during the illness of Mr. Henry T. Hare, announced the long list of losses which the Institute has suffered by death since the closing meeting of last session [see p. 64]. Obituary notices of most of them have already appeared in the JOURNAL.

On the motion of Mr. Dawber the following resolution relating to the late Sir Lawrence Alma-Tadema was passed by the Meeting: "That the Royal Institute of British Architects do place on record its profound sorrow for the loss it has sustained by the death of its distinguished and highly esteemed Hon. Fellow, Sir Lawrence Alma-Tadema, O.M., R.A., and do offer an expression of sincere sympathy and condolence to his family in their sad bereavement."

Mr. Dawber also asked the Meeting to pass a vote of condolence with the family of Mr. Sydney Smirke, whose generous contributions to the Institute Library, extending over many years, had always been most gratefully appreciated. Also that a similar vote be passed to the family of Mr. George Enoch Grayson, who might be considered the *doyen* of Liverpool architects, and who, after some fifty years of strenuous work, retired from practice on the last day of 1900. Mr. Grayson was a Past President of the Liverpool Architectural Society and had served on the Council and on the Practice Standing Committee of the Institute. Mr. Dawber said he felt sure the sympathies of the Institute would be extended to his son, Mr. Hastwell Grayson, who was a member of their present Council. Finally, he asked that a vote of condolence be passed to the sister of the late Mr. Edward I'Anson. Mr. I'Anson, who was a son of one of their past Presidents, was a great friend of the Royal Institute, and came of a long and distinguished line of architects. No fewer than three generations, of which he was the third, had occupied and carried on their practice in the same office in the City.

LEGAL.

Architect's Responsibilities: Supervision of Building: Damages for Defective Work.

MACBETH v. BEARDMORE.

Through the instrumentality of the Practice Standing Committee, Messrs. Fraser & Ross, Solicitors, of Inverness, have kindly favoured the Institute with a copy of the judgment delivered by Mr. J. P. Grant, Sheriff Substitute, in the case of *Macbeth v. Beardmore*, heard at Inverness in the month of May last. The Practice Committee consider the case of such importance to the profession generally that a record of the decision should be preserved in the JOURNAL for the information of members. The facts are sufficiently brought out in the learned Sheriff's judgment, which, omitting portions not material for the present purpose, is as follows:—

The Pursuer in this case, an architect (who is now represented by his Executrix), sues for the balance of his professional fees for work done for the Defender. It was admitted at the proof that the amount of remuneration claimed was correctly stated, provided that the Pursuer had properly and efficiently executed his duties as architect. That is the issue between the parties, and the onus is on the Defender to prove that the Pursuer failed to properly execute these duties. There is also a claim for outlays which does not appear to me to be disputed.

The Pursuer was employed in the usual way to draw plans and specifications for the proposed work to be executed for the Defender, a surveyor being employed to draw up the schedules of quantities; but this does not exhaust the Pursuer's duties on the scale of remuneration allowed (5 per cent.); he was also charged with the duty of superintending the building operations; upon his certificate the contractors were paid; and his final certificate implied that the contractors had fulfilled their contracts with the employer. So much is settled by the cases quoted below, and was admitted by every witness in the case who was an architect and examined on the point.

The first question, then, that arises is what was the contract in relation to which the Pursuer had this duty of superintendence? There is a building contract in probative form between the Defender and the various tradesmen, No. 9 of Process; and that document incorporates by references a specification by the Pursuer as architect, No. 10 of Process, and the Schedule of Measurements, No. 11 of Process, by the witness, Mr. Henry, a surveyor. The contract was not signed for two or three months after the work had begun; but the work had been begun upon signed offers by the respective tradesmen, which also referred to both the specification and the schedule. It does not seem to me to be material that the actual written contract was not signed before the work commenced; it in no way altered, either to extend or diminish, the obligations of the tradesmen; whether under the offer and acceptance or under the contract, they were equally bound to execute their work in conformity with both the specification and the schedule. Just the same questions arise whether under the offer and acceptance or under the written contract. In fact, the written contract was the homologation of the offer and acceptance, with the addition of further stipulations in regard to time and other matters which do not affect the issue in this case. It is true that the offers refer to schedule "rates" only without specific reference to the notes prefixed to the schedule, but to ascertain the schedule rates it was necessary to refer to the schedule, and the notes are part of that schedule. The contract is in

writing, whether in one or other or both of these it does not matter which, and I cannot look beyond the writing to discover it.

Taking, then, the written contract, as contained in Nos. 9, 10, and 11 of Process, the duty of the Pursuer as architect was to see that the Defender as his employer got what he had contracted for. The law is clear, *vide Steel v. Young*, S.C., 1907, p. 360, *Ramsay v. Brand*, 25, *Rettie*, 1912, and *Jamieson v. Simon*, 1 *Fraser*, 1911. An architect has no power to sanction deviations from the contract in anything that matters without the consent of his client, even to make a better job; doubtless in practice an architect often does, and trusts to his client's subsequent ratification of his experience and knowledge; but he does so at his own risk. In unforeseen and unprovided-for contingencies the architect may have a wider discretion, e.g. he might substitute the next best for what it is absolutely impossible to procure; but he is there primarily to see that his client gets his bargain and nothing more or less.

Taking the contract in the present case, in the architect's Specification of Works he has provided for the mason work that "all stones for the dressings to be from a Morayshire quarry approved of by the architect, and all stones must be of sound, hard, durable white rock of uniform colour, and entirely free from all blemishes, such as iron stains, clay pits, and pebbles." In the surveyor's schedule in the notes it is provided that "freestone for dressings to be taken from Newton or Covesea Quarries of the best liver rock free from defects of every kind and all stones to be laid on their natural or quarry bed."

Now, it is to be observed that in these two separate sets of directions to the mason there is nothing in the one in the least contradictory of the other. Covesea, the stone selected by the architect, is a Morayshire quarry; "free from defects of every kind" includes the condition that it "be entirely free from all blemishes such as iron stains, clay pits, or pebbles." The specification only mentions "white rock of uniform colour;" the schedule only "liver rock," but the evidence shows that liver rock can be white rock of uniform colour; and, lastly, only the schedule requires that stones be laid on their natural or quarry beds. The schedule and specification can be read together without any contradiction, or even difficulty, though sometimes one, sometimes the other, is the more precise.

It was argued, however, that the contract that the Pursuer had to supervise was that set forth in the specification alone; that what was contained in the schedule he had no knowledge of or responsibility for. In so far as the schedule is a Schedule of Measurements only, I could believe that the surveyor alone was responsible; but if the schedule is incorporated in the contract between the employer and the tradesman, it comes, *ipso facto*, within the architect's cognisance, because he is charged with the duty of seeing that contract carried out; and if the surveyor has added general conditions to his Schedule of Quantities, as in this case, I cannot see how the architect can avoid responsibility for them. Other questions might be raised if the specification and schedule were irreconcilable; but here they are not. Nevertheless, assuming that the architect is there to see the contract carried out and that his final certificate means that in his opinion it has been carried out, I cannot but hold that he is bound to inform himself of what the contract is. In this case the Pursuer knew that a formal building contract was contemplated; it was sent to his office to be executed by the contractors; he could have informed himself of its contents on that occasion; or asked to be furnished with a copy, which he never did.

There can be no question, on the evidence, that the

contract for the mason work on the combined specification and schedule was not properly carried out. The stones were not of uniform white colour, and many of them were not placed on their natural or quarry beds; and to remedy these deviations by replacing these stones would take a large sum of money; but that is the Defender's demand. . . .

On this view I have to assess the damage due to the Defender only for the mason work being disconform to the contract. He has elected to take his remedy in the form of damages, which (as regards the mason work) he assesses at the sum of £1,502 16s. 6d. sterling in No. 125 of Process, but restricts to £750 (as regards the mason work) in his defence. From this sum due a deduction must first be made for stones that have since disclosed imperfections not apparent at the time of building, which the Pursuer has had no opportunity of putting right. The Defender's complaints seem to have taken a long time to formulate in their present shape; but that may be reasonably accounted for by his requiring expert advice. At first he complained of the colour of the stones only and of their porosity. As regards the colour, I cannot doubt the weight of the evidence that Covesea stone usually weathers to a lighter shade; but still there are now strongly coloured stones in the building which are disconform to the specification. As to the porosity of sound Covesea stone, I accept the unanimous verdict of the architects who habitually use it, that it is one of the most impervious freestones in use; and the weight of the evidence shows that the leaks in Flichity House at the tower, the billiard-room, and other places complained of were due to defective pointing of joints, and not to the porosity of the stone, and could have been rectified by the Pursuer if he had been allowed to do so out of the unpaid balance of the mason contract, as also could the replacement of visibly defective stones, which was his reasonable offer to settle the matter. The objection to the stones being "on cant" was not before him at that stage. Finally, I cannot impute any blame to the Pursuer for neglecting to visit the work in progress; there was a resident clerk of works, who regularly reported, and in these circumstances I think his visits were frequent enough according to the practice of the profession. Neither am I prepared to entertain the claim for £500 damages for depreciation, because I think that if the Defender had allowed the Pursuer to overhaul the work in reasonable time the job would have been, for practical purposes, a good one.

I have therefore fixed a sum which represents only the damages due on account of some stones being darker in colour than the Defender was entitled to expect, and of a considerable number being on cant instead of on their natural or quarry beds, disregarding the claims for alleged porosity which I hold did not exist, or for defective pointing, or for individual stones which show a tendency to decay, for these the Pursuer offered to put right. The colour is doubtless a disappointment to the Defender; he was entitled to expect freestone of a uniform colour that could reasonably be called white, but he has not got it; and he was equally entitled not to have any stone on cant; though, on the evidence, I doubt whether his house is any the worse for this deviation from the contract. The Defender has changed his position materially since he first made his claim. He has failed to a large extent in his claim as on record—for example, as to the carpenter work and the porosity of Covesea stone. The Pursuer's only fault was that he gave too wide a latitude to the matter of colour, and allowed the freestone to be placed on cant, not, as I think, to the Defender's disadvantage, but without his sanction. In

assessing the damage I allow for what I think it would cost to make good these deviations. I take into consideration that there is a balance of fees due to the Pursuer; that it is not a case where the requisite repairs are necessary for the use or convenience of the building, as in the case of *Jamieson v. Simon*, quoted above, and that the Pursuer was not allowed to make good the ordinary imperfections that might be expected to disclose themselves, for that is the cause of any damage the Defender may have suffered from water coming into his house, which the colour or position of the stones had nothing to do with. I therefore think the sum of £200 sterling, in addition to the balance of fees unpaid, is as much as he can reasonably claim. In the whole circumstances, I do not think I should award expenses to either side.

MINUTES. II.

At the Second General Meeting (Ordinary) of the Session 1912-13, held Monday, 18th November 1912, at 8 p.m.—Present: Mr. Reginald Blomfield, A.R.A., President, in the Chair; 17 Fellows (including 9 members of the Council, 24 Associates (including 1 member of the Council), 14 Licentiates, and numerous visitors—the Minutes of the Meeting held 4th November 1912, having been published in the JOURNAL, were taken as read and signed as correct.

Mr. E. Guy Dawber, Vice-President, acting in the absence of the Hon. Secretary, formally announced the decease of the following members: Sir Lawrence Alma-Tadema, O.M., R.A., Hon. Associate, elected 1877, Hon. Fellow 1901, Royal Gold Medallist 1906; Sydney Smirke, Fellow, elected 1888; Thomas Arnold, Associate, elected 1867, Fellow 1904, placed on list of Retired Fellows 1904; George Tunstall Redmayne, Associate elected 1872, Fellow 1877, Retired Fellow 1902; Henry Hall, Associate elected 1872, Fellow 1887; John Thomas Bressey, Fellow, elected 1877; George Friend, Fellow, elected 1888; William Frederick Unsworth, Associate elected 1882, Fellow 1891; Francis Edward Massey, Fellow, elected 1901; Edward Blakeway I'Anson, Fellow, elected 1880; George Enoch Grayson, Fellow, elected 1886; Charles Henry Rew, Fellow, elected 1905; John S. Paul, Associate, elected 1886.

On the motion of Mr. E. Guy Dawber, it was

RESOLVED, that the Royal Institute of British Architects do place on record its profound sorrow for the loss it has sustained by the death of its distinguished and highly esteemed Hon. Fellow, Sir Lawrence Alma-Tadema, O.M., R.A., and do offer an expression of sincere sympathy and condolence to his family in their sad bereavement.

Votes of condolence were also passed to the nearest relatives of the late Mr. Sydney Smirke, Mr. G. E. Grayson, and Mr. Edward I'Anson.

The Secretary announced the results of the Statutory Examinations held by the Institute in October.

The following, attending for the first time since their election, were formally admitted by the President: William Arthur Rigg, Associate; John Walsh, Licentiate.

Mr. J. L. Ball, Director of the Birmingham School of Architecture, having read a Paper entitled "Bath: A Comparative Study," a discussion ensued, and a vote of thanks, moved by Mr. Mowbray A. Green [F.], and seconded by Mr. L. March Phillipps, was passed to Mr. Ball by acclamation.

The proceedings then closed, and the Meeting separated at 9.45 p.m.



FIG. 1.—VILLA SACCHETTI, ROME.

THE PRINCIPLES TO BE OBSERVED IN DESIGNING AND LAYING OUT TOWNS TREATED FROM THE ARCHITECTURAL STANDPOINT.

By T. HAROLD HUGHES, A.R.C.A.Lond.(Arch.) [A.], R.I.B.A. Essay Medallist 1912.

Essay submitted under the Motto "Redundancy," awarded the Royal Institute Silver Medal and Twenty-five Guineas, 1912.

APPROACHING THE PROBLEM.

I. THE ARCHITECTURAL IDEAL.

THE architectural standpoint in designing and laying out cities and towns is that point of view which demands the subordination of many component parts to the production of an harmonious and united whole, which shall not only satisfy all utilitarian requirements but contribute to the mental and moral welfare of mankind. Practical problems must be so solved as to appeal to our sense of beauty. Such necessities as water supply, schemes of drainage, or the transmission of power will, within broad limits, exercise no influence on the ultimate effect of the city; but lines of transportation, the allocation of the various quarters, the distribution of park lands, public buildings, and monuments, and the lay-out of streets and squares will all be designed to assist in the realisation of some great artistic scheme.

Town planning is an art with a far-reaching influence. The painting or statue placed in the art gallery or in the dwellings of the wealthy is seen by few; but the town planner, whose canvas is the hill and the plain, can by his creation of the city beautiful give pleasure day by day, and affect the lives of many not only for the present but for generations to come.

To whom must we look for the creation of the beautiful town? The mind accustomed to the design of buildings, to the grasp of an entire problem, to the harmonious relation of many details fitly proportioned to their object, alive to the value of the axial line and vista, knowing how and where to concentrate interest, able to accentuate and subordinate parts, this mind—

the mind of the architect—is the one to design the town such as I would define it. How must the problem be approached? No great work of art can be achieved without some high ideal, to attain which the artist constantly must strive. Some great thought must be embodied in every design, every detail must be attuned to some great ruling principle, and in a large comprehensive scheme the designer must seize upon every opportunity of enforcing the dominant idea.

The town must be conceived as a whole, and must be the work of one whose high ideals and imagination can rise above the host of details which beset the designer of such a vast and complex problem. The planner of towns must be a dreamer steeped in ideals and freeing at the outset his mind from all petty details. He must create around him by his thoughts a favourable environment, and so conceive the broad lines of his scheme. By a wise study of the past, recognising its limitations and its ideals, he can stimulate his imagination and gain an insight into the qualities required to create the city beautiful. Knowledge of the ruling principles, and aided by these, an attempt to re-create in his mind, from their ruins, the cities of long ago, will be of the utmost value; and may he not, in this respect, glean something from painters who could depict the glories of the past in such scenes as the Landing of Cleopatra, or Dido and Carthage?

II. LESSONS OF THE PAST.

(a) *Greek.*

Was it well-considered planning and the grouping of buildings and accessories into one great architectural scheme, or beautiful buildings superbly placed, which contributed to the effect of a Greek city? I think the latter. Selinonte, influenced by the work of Hippodamus, in whom we see the highest attainments in Greek planning, owes its beauty to its elevated position above the water and to the sense of unity in the design of its buildings—as a town plan it is a failure. From the great period of the fifth century B.C. to the time of Alexander there was an increasing desire for clear reasoned thought and an attempt to render some fine conception in the city plan in place of chance haphazard growth; but that perfect unity and subordination of all details to one great idea so beautifully shown in their individual buildings was never attained. Though attempts are made to obtain the best effects within the limits imposed, the necessity of fortifications, and the insistence on the preservation of sacred spots, precluded the adoption of any unified architectural scheme. At no other period can a more complete understanding of the site and its resources be seen. Art and Nature are happily wedded, as shown in the magnificent disposition of their buildings on some prominent site or in the theatre cut out of the slopes of the hill; and at Pergamos, Athens, and elsewhere, the value of broad level lines on a hilly and diversified site is apparent.

The buildings on the Acropolis, Athens, though not planned in direct relation one to the other, were so placed on the rock as to give the appearance of one great *ensemble* as seen from the city below, the outward and visible sign of that which dominated their lives. The Propylæa, traced from the early Cretan palace to Mnesicles' superb edifice at Athens, shows a desire to obtain a dignified first impression and a portal worthy of the precincts to which it gives access. Public gymnasia and stadia were brought more into architectural relation with the city—a contrast to our method of dealing with recreation grounds, though now, as then, physical exercise plays an important part in life. The Agora, placed in relation to the two main cross streets of the town, shows an appreciation of the importance of the vista, and the grouping of their public buildings round it shows the value attached to the formation of some climax in their design, an effect, however, more magnificently obtained by the placing of the great dominating temples on an eminence, giving to the whole composition a sense of unity extending to the smallest houses, however distant and irregularly scattered about. Though symmetry was not always striven for, a general sense of balance is felt and an interesting sky-line maintained.

(b) Roman.

In the study of Roman Civic Art it is the great scale and big way of approaching problems which strike one most forcibly. Possessed of more power and fewer restrictions than the Greeks, they did not hesitate to cut away the side of a hill or to fill in a valley to suit their magnificent plans. Regular and symmetrical schemes were adopted, the chess-board system being more or less customary—the two main streets of the town set at right angles to one another regulating the lay-out of the remainder of the city plan; but effective planning is limited more or less to the public buildings and markets, the residential parts being unresolved.

The value, then, of Roman study to us must centre chiefly on the Fora and their surroundings. Placed usually at the intersection of the two chief streets, they occupy central positions, but, hidden within the angles formed by the two ways, they partake more of the nature of enclosed spaces and shed none of their glory on the adjacent streets. The surroundings of the Fora (now no longer market places), with their colonnades and porticoes, all contribute to the total effect of magnificence and speak eloquently of the civic pomp and splendour of Roman public life, something of which might with advantage be infused into our own.

The importance attached to unity and regularity of planning and to the vista is shown in the grouping of the Fora in Rome, which are so placed that they are not only complete in themselves but are in architectural relation to those already built; moreover, in the great Fora of the Eternal City the important principle that public buildings must be well placed, if they are to have their full architectural value, is exemplified. Great care is taken to mask all irregularities—in the colonnaded streets of Palmyra, set axially with the temples at each end, any deviation from the straight line is overcome by a skilful adjustment of triumphal arches.

Delightful emphasis was given to the junction of cross roads, and an added importance to the axial lines by the placing of large pylons or four-way arches at the points of intersection. The Triumphal Arch to the Forum of Trajan, the Hexagonal Hall to the Temples of Baalbec, or the steps and mighty crescent forming the entrance to the Palace of Augustus on the Palatine Hill, all show the same desire to create a magnificent first impression.

In the placing of civic ornament much may be learnt from the Romans. Their use of statuary placed on pedestals in the Fora in relation to the whole design, or on corbels attached to the columns, the lines of the drapery thus contrasting with the formal architecture, is far nobler than our haphazard methods of dealing with such objects at the present time.

The monumental character of Roman work is the result of a close adhesion to three great principles: (1) Symmetry; (2) the maintenance of the axial line, and (3) the establishment of some central feature and subordination of accessory parts. These principles, so well shown in their great Thermæ with their beautifully grouped halls, directly or indirectly must assert themselves in any successful city scheme.

In the hemicycle with its great possibilities, the Romans added the curve to the straight line of the Greeks to be fully developed in the Renaissance.

(c) Mediæval.

In all great periods of art a desire for symmetry and regularity is observable, at one time more pronounced than at another. In the Middle Ages, plans of towns, when laid out *de novo*, were regular and symmetrical whenever the nature of the site would permit. The majority of examples, however, have developed the irregular forms they take owing to determining lines of fortifications and a gradual unregulated growth; under these conditions then they cannot have the value for study for a modern city, which should not be laid out to afford material for the water-colour artist! It is possible to admire and love the marvellous effects of these old towns without wishing to reproduce them in the twentieth century. They are the products of a time when to do the right thing came naturally, and each man, with a great tradition behind him,

unconsciously built so that his work took its place beautifully as a unit in the whole, and effects were obtained for which it would be absurd, under modern conditions, to strive.

Lessons, however, may be learned from mediæval work. The walls of fortification enclosing the old towns, and clearly defining them from the country around, show the value a definite boundary would be to our modern cities, instead of the straggling outskirts so often a disfigurement. The clustering of the town around some great towering church or cathedral, a dominating mass, like the Acropolis at Athens, gives a sense of unity to the whole; whilst countless examples show that perfect geometrical regularity on paper is not always necessary, for little deviations from the square are with difficulty measured by the eye. From the market place we can learn the value of the quiet, restful effects obtained by a judicious arrangement of street entrances, giving an unbroken frame of buildings, and with it that sense of seclusion so suitable for a square in a busy commercial centre (an effect which may be obtained without meandering streets but in a rectilinear system with streets entering "en bras de turbine"). Such an arcaded market place as that of Montpazier would make, in principle, an excellent model for our shopping centres; and we can learn something too for our residential quarters, where, removed from the centre of the city, the need of formality being less, a judicious variation in the building lines of the street gives a pleasing and welcome variety.

(d) *Renaissance.*

With the revival of Classic architecture in the fifteenth century in Italy, and with it earnest study of the great buildings of the Romans, appeared the revival of the "grand manner" in planning, and that fine sense of breadth and scale in architecture so closely associated with the name of ancient Rome. The regularity and symmetry of the buildings soon spread to gardens, streets, and "places" which were laid out at that time and in conjunction with them. The setting of buildings and arrangement of their sites and the practice of formal gardening developed a desire for larger fields to conquer, and plans of cities and towns were schemed showing a desire to consider the problem in the light of a complete harmonious whole. A masterly grasp of the possibilities, a largeness of conception, and a power and a courage to handle civic design on a scale such as never before had been attempted now becomes apparent.

The desire to shed the glory of important buildings upon their surroundings by placing them on some prominent point to which many roads converge, large open spaces or forecourts to buildings to enable their designs to be properly appreciated, magnificent vistas, a predominance of geometrical forms, and a linking up of many features into one connected design are all characteristics to be seen in the plan of any Renaissance town.

The Italian villas of the sixteenth and seventeenth centuries (largely the works of men who were painters before architects!) are excellent examples of the "grand manner" in architecture. A realisation of the possibilities of the site, of the value of dignified approaches, of noble terracing, of vistas, of formally laid out gardens in excellent relation to the buildings, these and many other qualities which defy analysis are to be seen in such designs as the Sacchetti [fig. 1], Madama, Aldobrandini, or the D'Este.

But in other countries besides Italy, countries to which the Renaissance spread, there also may be studied noble works. In France, perhaps more than anywhere else, can be seen the finest examples of the harmonious design of buildings and sites—of grounds treated as an essential part of the architecture. The sites usually flat, prolonged vistas [fig. 7], large open spaces and beautiful broad effects of water, grass, and foliage, are points in which the French excelled. No other people have shown such a magnificent sense of breadth and space as may be seen in such creations as the gardens of Chantilly or Versailles. In the Renaissance, for the first time, we see the city planned as an artistic whole. A fine conception precedes its slower realisation, and every detail is subordinated to the one central idea. Would that we again could pick up the threads of a lost tradition!

III. INFLUENCES OF TO-DAY.

All good art must live—it must reflect the age we live in. Full recognition must be given to all the practical considerations which affect civic art, for town planning is not an art plus a science, but demands that all modern utilitarian requirements and scientific problems be accepted and expressed in beautiful forms. Our retrospective glance at the cities of the past shows the results of forces entirely different from those at work to-day, and the habits and customs of the people who inhabited them are clearly written in their plans. It follows, then, that we must consider every tendency of modern life, science, and invention which will directly or indirectly affect our design and reflect the twentieth century.

Determining factors will be found in the railway and transit systems in general. The speed of traffic almost as much as its bulk will regulate the width of roads, and faster transit facilities will be desirable in the future. Motor and other rapid modes of locomotion necessitate long, straight streets, the avoidance of awkward turns, and the provision of open points of intersection together with means of easy supervision and direction. Modern city life with its stress demands that office quarters be as free as possible from traffic; and, as shopping streets and centres must always entail blockage in the traffic, for such quarters as these duplicated streets may be the only solution.

Class distinction, "fashionable quarters," or socialistic tendencies will all leave their mark on plans. Economic problems, the cost of living, the desire of the workman to have easy or cheap access to his work, the tendency to avoid domestic

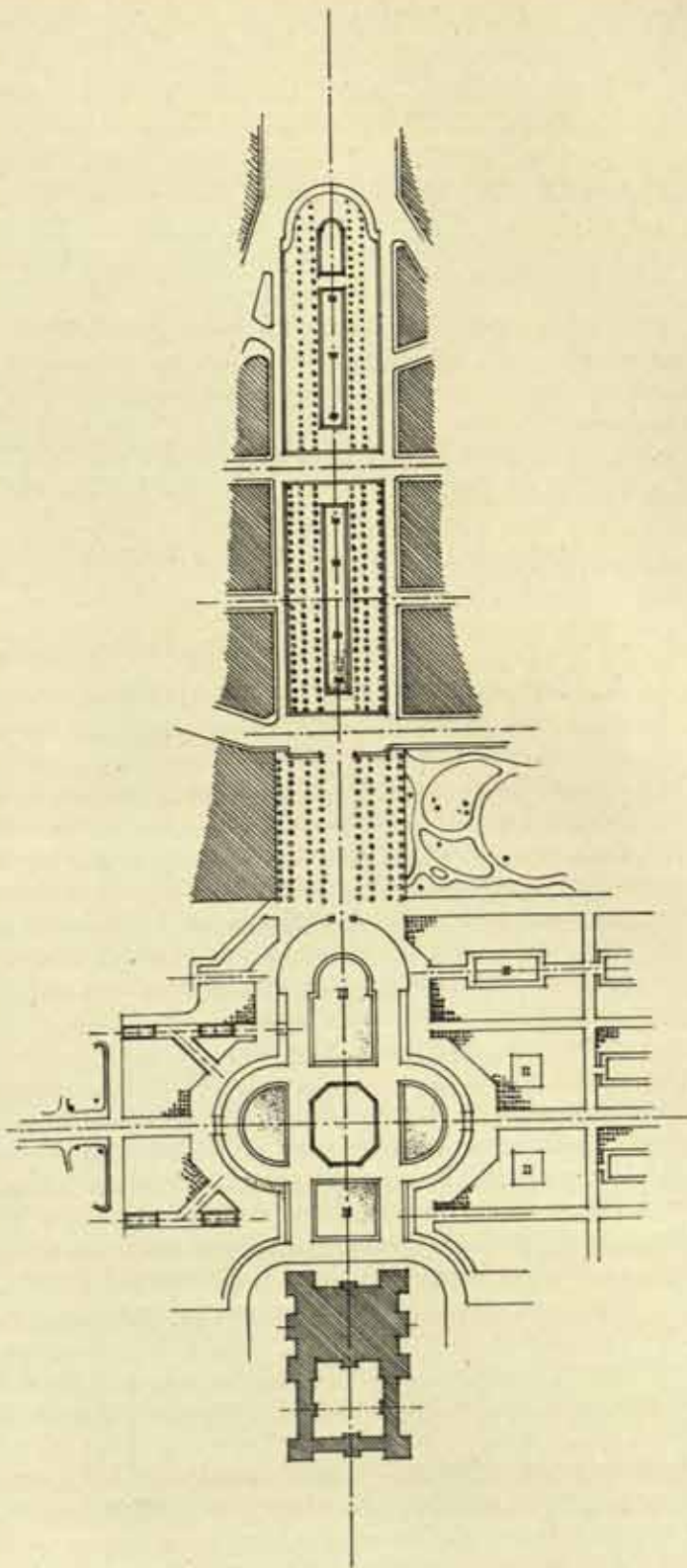


FIG. 2.—LUXEMBOURG GARDENS.

problems and live in flats and hotels, and many other such present-day influences will have a marked effect on the city, and, properly grasped, will help in the production of a living plan suited to the needs of the population of to-day and to-morrow.

Scientific progress must leave its mark. The tendency to concentrate in the production of power at large central stations will affect the aspect of the city, and newer methods of transit both by land and air must be considered. May it not be something of a fetish that in the days of such undertakings as the Suez and Panama Canals we should let our designs be regulated by every little undulation of the site, perhaps to the detriment of a broad, straightforward scheme?

ATTAINMENT OF THE IDEAL.

THE GENERAL TOWN PLAN.

(a) *The Individuality of the Town.*

To portray the town's individuality and to express its character must be the first consideration and constant endeavour of the designer. He must consider the life of its people, the use of the city, be it collegiate, legislative, or commercial, the materials to be used, the vegetation that will thrive, and, greatest of all powers to give individuality, the configuration of the site, considerations which, by a clear acknowledgment and expression in his design, will give to the city its distinctive character and clearly reflect the life and history of its dwellers.

(b) *The Site in General.*

A glance at those cities which stand out pre-eminently as the most beautiful in the world will prove that, in each instance, the nature of the site has entirely governed the general layout, and will show how natural features have been turned to the greatest advantage; but whereas in the cities of the past military considerations have usually governed the selection of the site, we, more or less within limits, may select one for its aesthetic possibilities. Full knowledge of the site must precede the formation of any scheme for its covering—no greater mistake can be made than to approach the problem with some preconceived idea of a type of plan "formal" or "informal" which the designer wishes to produce. Originality, it should be remembered, will arise from a close adherence to the demands of the site.

The mountain, valley, plain, or river will all determine the form of plan [fig. 4], whilst every feature of the site, woods, ponds, or clumps of trees must be taken into consideration and turned to good effect. The lake will suggest a water frontage and the public buildings placed in conjunction with it [fig. 8]. The river, perhaps, will have the strongest influence in the development of the city site, and the possibilities of great sweeping curves to its embankments, or the splendid position for public buildings, lining each side, should not be overlooked. The bridges should be carefully placed, since they will govern the setting out of the streets on each side, and care must be taken in the placing of the industrial quarters that they may not in time unduly spoil the riverside development. If the river runs at the foot of some precipitous hill, as does the Wear at Durham, a magnificent site is afforded for the building, ecclesiastical or civic, which is to dominate the whole city plan.

The hillside or summit will afford the most commanding position for the chief public buildings of the city. If the former, its dark covering of trees and foliage will demand a careful silhouette to the buildings grouped upon its slopes, and if these be of a public nature the effect must not be spoiled by allowing the town to develop behind them. If the hill or mountain side be steep many opportunities may occur for noble terracing and sheer cliffs of wall. The residential quarter will naturally require high ground, which should not, however, compete with the spot selected for the civic centre.

Not only will the nature of the site itself determine the general lines of the design, but

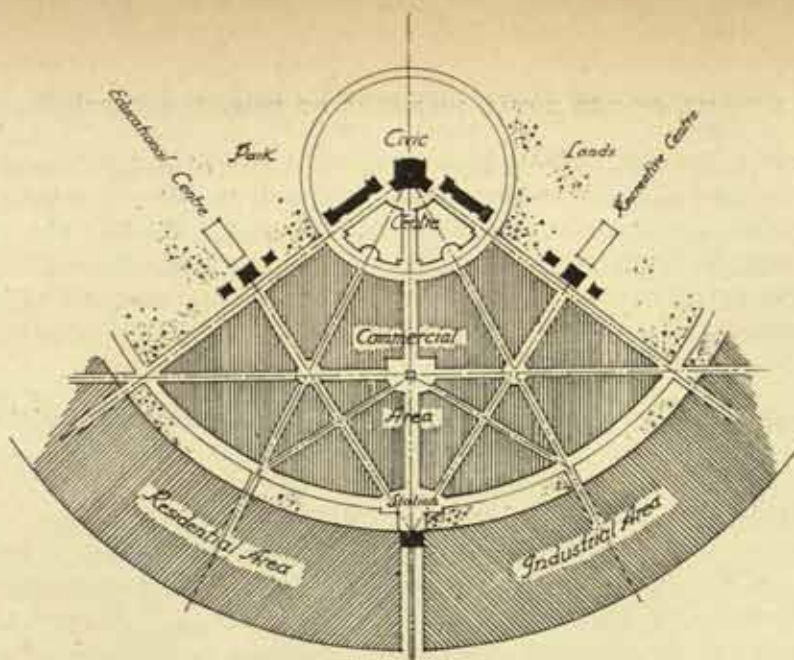


FIG. 3.—RADIAL PLANNING: DIAGRAM OF A MODERN CITY BASED ON THE PLAN OF KARLSRUHE.

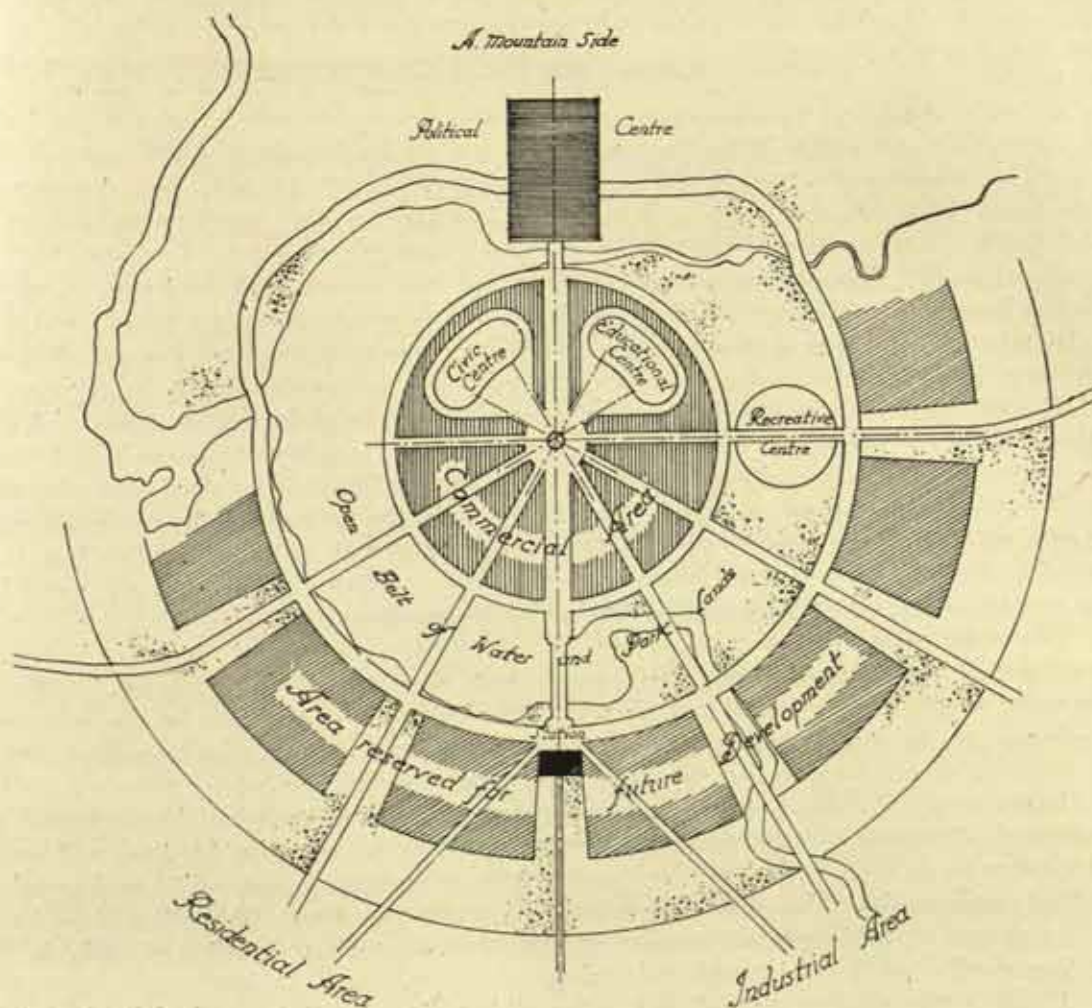


FIG. 4.—A CAPITAL CITY: GOVERNMENT BUILDINGS DOMINATING THE WHOLE.

also prominent features of the surrounding country. Views of distant mountains, hills, or water, or any beautiful prospect, should be linked up with the city. Avenues, open spaces, and the forecourts to important buildings must be schemed to obtain a view of the distant country, the formal city buildings forming a foil and setting to the landscape.

Every part of the site having been given the fullest consideration, and all its possibilities grasped, the planner, always thinking in three dimensions, may outline his scheme.

(c) *The Sub-division of the Site.*

Practical considerations such as prevailing winds, rainfall, geological formation, &c., accounted for, we may begin to dispose of the various quarters which will go to make up the city plan.

The city may be sub-divided into three areas: (1) The Civic and Commercial, conveniently considered together; (2) the Residential; and (3) the Industrial. Reasons of convenience and health may dictate that these areas must, within certain limits, be separately placed and grouped and determine the relative positions they should occupy. Our architectural standpoint demands more—it demands that, though separated (and each requiring a different treatment and some effect of centralisation in itself), they shall retain their positions as units in a complete whole, and be in relation to one another whether viewed from the mountain-top or public square. The following are ways by which this may be obtained: (1) The subordination of the minor parts and accentuation of the chief, giving a greater vigour and sense of completeness to the whole. (2) Main radial avenues between the heart of the city and its outskirts [fig. 4], which should, at their termination both in the centre and in the area they serve, have some prominent and well-fixed focal point, to give a sense of connection to city and suburb. (3) Ring roads maintaining their width and character throughout. (4) Great formal sweeps of dwellings in the residential quarters, perhaps terraced high on some hill like the seats of a Greek theatre, and having the chords of their curves in definite relation to the centre, whilst, whenever possible, straight streets, however short, may be planned with their axes radiating from the important buildings in the heart of the town. (5) Scale obtained by the adoption of a similar unit for both town and outskirts. There is no reason for the level lines of classical cornices in the civic centre to give way entirely to spires and mediæval gables in the environs.

Of great importance are the problems of the disconnection of the various areas, and the transition from one quarter and class of building to another. No definite rules can be laid down since each site will require a different solution. By treating the main avenues connecting the areas for part of their length as park-ways, not only would the park system be continued from the open outskirts to the more closely built upon commercial part, but the transition from one class of building to another would become less noticeable. More effective, perhaps, would be ring avenues of ample width connecting up a series of open spaces.

Where the residential area is in close contact with the commercial, the office buildings should not give way immediately to the detached villa standing in its own grounds. Flats or tenements would form a more agreeable transition from the city block to the suburban dwellings—yet, in any attempt to attain pleasing transition from one area to another, great care must be taken not to give too disconnected an appearance to the whole.

Assuming the positions to the various areas already allocated, each individual one may be considered. Something of the principles governing the lay-out of the whole town will apply to each area, each must have some centre of greater or less importance, whilst various other points of emphasis should be provided round which the plan may form. Proportion of solid and void, of masses of buildings and masses of foliage carefully considered, will greatly assist in the ultimate effect of each quarter and of the whole.

1. *The Civic and Commercial Area.*—Something of a climax is required in the whole

city design, and this "climax," if the city be a political one, will be formed by the Government buildings [fig. 4]; if collegiate, perhaps by the university; usually it will be formed by the civic centre of the city itself [fig. 3]. The preliminary consideration of the site will have shown the most suitable position for this centre; an elevated spot, the mountain side, or water frontage, or a combination of these, being selected as the most important and prominent place; round it the civic and commercial area will be formed.

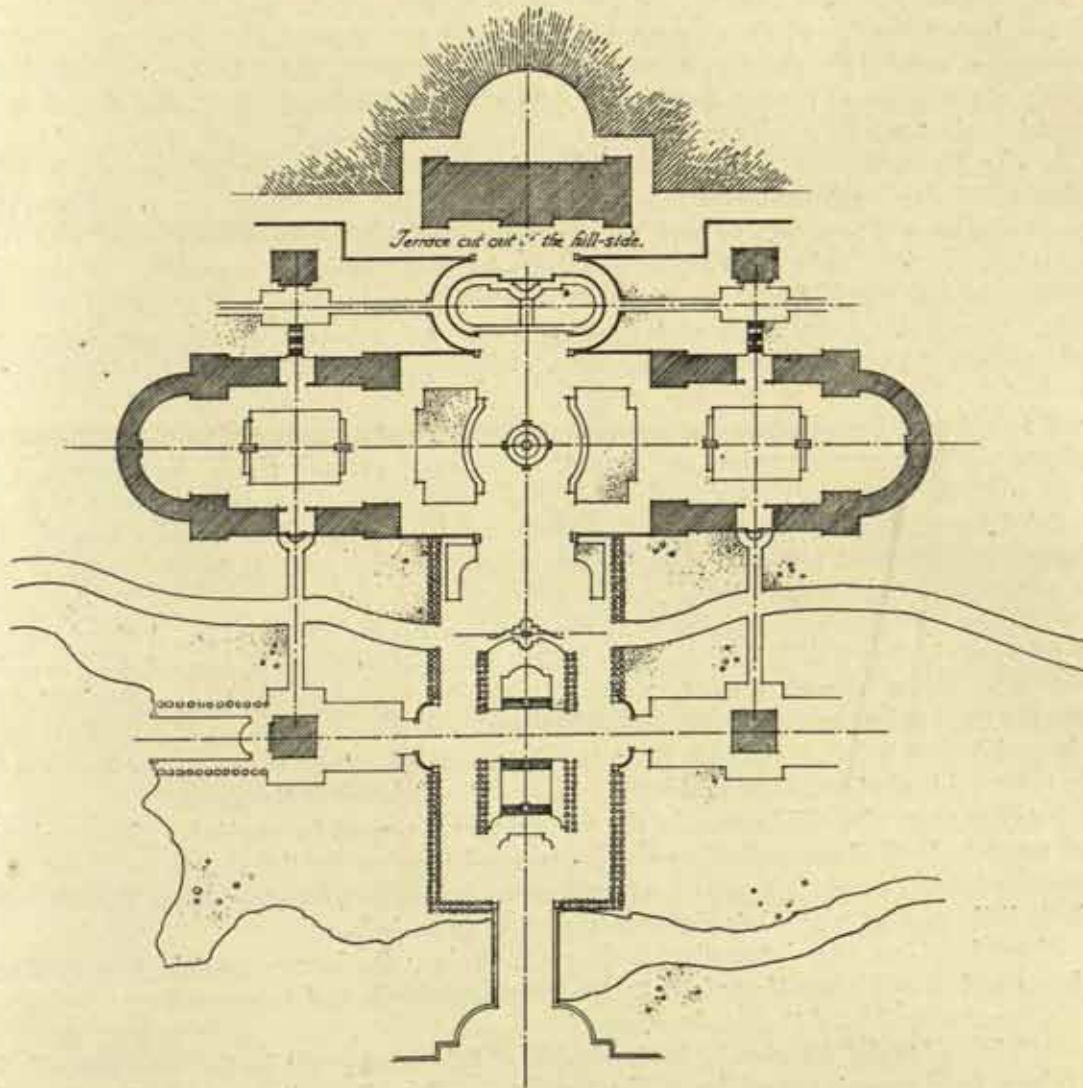


FIG. 5.—GROUPING OF GOVERNMENT BUILDINGS ON A HILL-SIDE.

Dignity should be the key-note in the lay-out of this quarter, and a greater degree of formality obtain here than in any other part. A more spacious distribution of the various parts, of roads, buildings, and open places, and a greater breadth of treatment, not only in the design of the individual buildings, but in the proportions of streets and forecourts, should pervade; and, in general, architectural magnificence will demand a more generous treatment than mere utility requires. From this quarter the greater number of avenues will radiate; its general shape and lay-out, then, should be so devised that its more prominent buildings may

be seen from as many points as possible and cast their radiance over the greatest area practicable. It will be the organic centre of the whole, and should be so disposed as to leave no doubt in the mind of the visitor, arriving by rail, road, or water, as to which is the heart of the city. If circumstances dictate that the civic quarter be placed at one end, then, in its relation to the other quarters, it should occupy some such position as does the Schloss and surrounding buildings to Karlsruhe [fig. 3].

Ample space should be reserved for the civic buildings, which, with their surroundings, should embody the pride of the citizens, for such centres as those of education, amusement, and shopping, and for the general commercial and office quarters; and if the various important buildings of the different centres be linked together by broad avenues, the value of each and of the total effect will be greatly enhanced.

2. *The Residential Quarter.*—A more homely, restful character will be proper to this quarter, and a much greater use of foliage, together with the smaller and more disconnected type of building, will prevent this part, on however much higher ground, competing with the civic centre. In this, as in other areas, a centre point to the design is desirable. Round this subsidiary centre, which should be spaciouly laid out in conjunction with the great avenues coming from the city, churches, branch libraries, shops, &c., will be built, and from it avenues should radiate to the various parts of the area. Other points of interest in the plan may be formed at the junction of main roads, where groups of shops, a church, or a school may be placed to give further emphasis to the plan, whilst recreation grounds will, in the poorer quarters, similarly provide points of interest. The main avenues should be laid out in a simple and direct manner; they may be of great width and planned with centre plots of grass and trees, forming promenades. Variety may be obtained by broad terracing, by plateaux, and by great formal curves, having, when possible, relation to the centre of the area or the chief civic centre itself.

Great care will be required in plotting the streets when the site is hilly. A street carried straight up an incline will, if the houses be built fronting it, result in broken, restless masses. It would be better in such cases to make the streets run on level lines on the hill-side, giving the long, unbroken roof-lines so suitable to such a quarter. If the road to ascend the hill winds to right and to left, delightful effects may be obtained if direct access by foot be given by long, easy flights of steps, always providing some spot of interest at the summit.

Endless rows of small houses in the poorer quarters must be avoided. Houses should show some method of concentration and be grouped together in the streets or round open squares or spaces, as any appearance of dotting the buildings separately about the site, each with its little garden, would be ruinous to the effect as a whole.

Street junctions offer interesting problems in design; the houses must be so spaced and designed as to form interesting vistas to the incoming streets and to prevent any unpleasant effects from unconsidered "side elevations."

3. *The Industrial Quarter.*—The treatment of this quarter will be the most difficult, for its future development cannot be easily foreseen. It will, in its general disposition, be governed by railway lines and sidings, rivers or canals. It follows, then, that in the careful placing of railways and waterways in the first place much can be done to ensure some ordered growth. This area, just as any other, should express its character in its streets, its places, and its buildings. Civic ornament will find no place here. Large and important buildings, such as customs houses, goods stations, or power houses might provide point of emphasis, and here, as elsewhere, a good street system will count for much. Architectural magnificence must, in the avenues, give way to the requirements of heavy traffic, and the buildings lining them should be of strong and simple character. Open spaces, quiet and restful in appearance,

will be needed here more than anywhere else, and such should be placed away from the busiest thoroughfares. Offices and warehouses should be grouped in an orderly manner, and when large

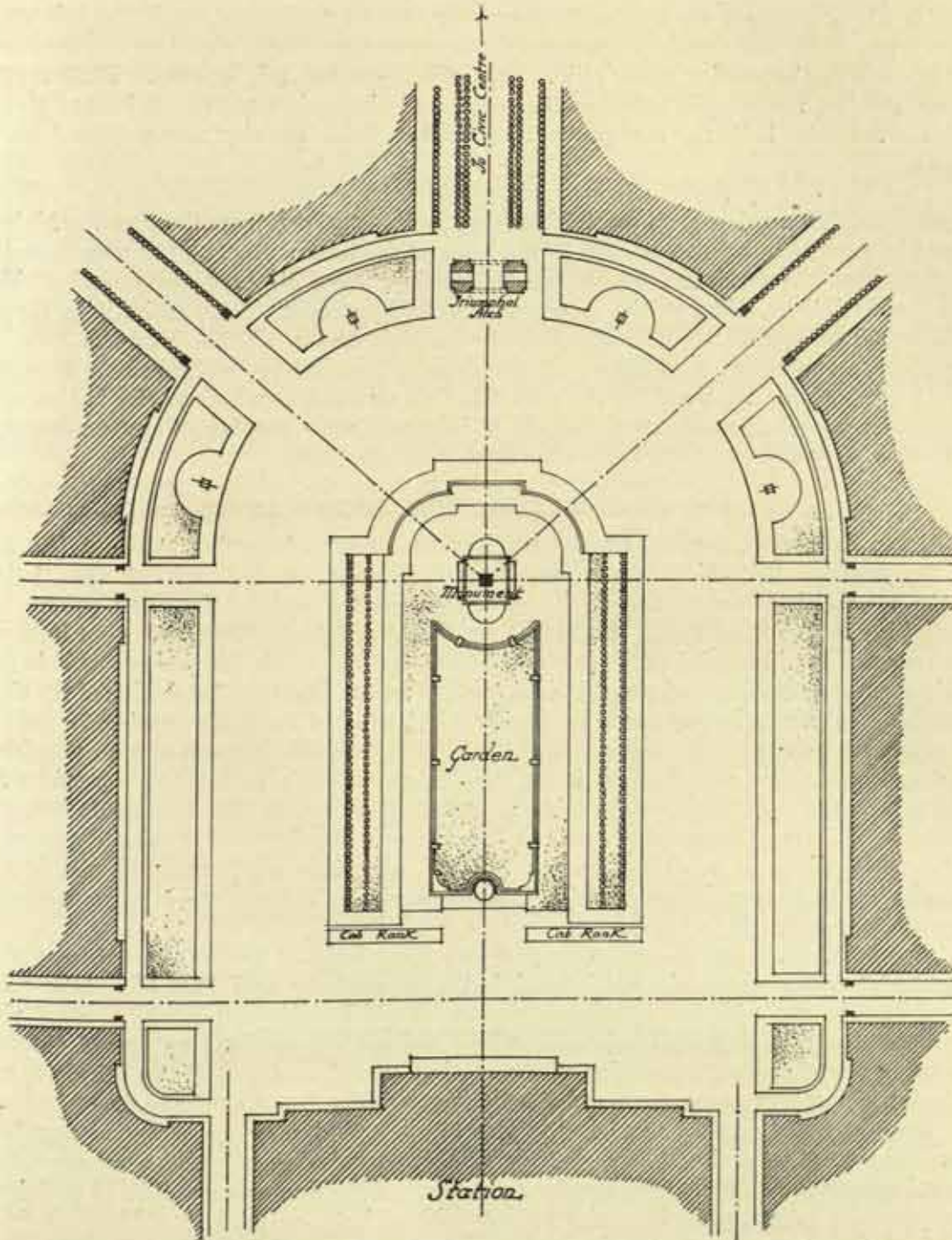


FIG. 6.—A STATION PLACE, RECESSED FROM LINES OF TRAFFIC AND SURROUNDED BY HOTELS, &c.

yards are required for loading and unloading goods, these might face the road with the buildings grouped round the sides, the breaks thus formed giving variety to the lines of the streets.

(d) *The Approaches.*

The problem of the first impression is one which the architect is constantly called upon to solve in the planning of his buildings, recognising how much it will count in the beholder's appreciation of his whole design. How much more important, then, must be the approach to the city and the impression given by it! It may be by water, rail, or road. Whatever the means, the first view should be as beautiful and impressive as it is possible to be, and should embrace the chief buildings and points of attraction which the city may possess [figs. 3 and 4].

The Approach by Water.—In our country this may be from the sea or river. Water in relation to a town has great possibilities, and in the approach from the sea, the harbour should be brought into direct relation to the heart of the town presenting the most imposing buildings, and the docks and warehouses treated in a more dignified and orderly fashion than usually obtains. Many cities may possess a river approach. Here again, if possible, a vista should be opened out from the docks to the civic centre, and the river-side given as attractive an appearance as possible. If the sides of the river are embanked the buildings should not be placed too closely to the river-side, but set some way back to give full value to the wide sweeps of river-side road, though, at intervals, some building, a customs house or dock office, may with great effect rise sheer from the water's edge.

The Approach by Rail.—The station, a noble building, the entrance portal to the modern city, should be placed in proximity to the best quarter, and from it should radiate avenues to the various centres, terminating in vistas of some important buildings [fig. 3]. Where possible, the chief avenue should lead directly, on the axis of the station, to the town's civic centre, framed in by a monumental arch or imposing pylons. In front of the station there should be a large open space, and the building itself must be somewhat recessed from the point of the traffic's greatest density. This open space should be laid out in a generous fashion, and planted with grass and foliage [fig. 6]. Something of the city's character might here be expressed, by the chief industries of the place forming the subject for sculptural ornament, and, recessed from the whirl of the traffic, a statue of some prominent citizen who may have brought fame to the town might well be placed. Ample provision for cab ranks and car shelters must be made so that they detract as little as possible from the general effect. The passage of the railway lines through the city must be devised to present as pleasant a picture as possible to the traveller, and, when they must necessarily run through districts fully built upon, it would be wise to plant the sides with trees, and in every case some reasonable space should be left between the rails and buildings.

The Approach by Road.—All main avenues will be designed to open out a vista of some important building which will add interest to the approach by road [fig. 4]. Main roads connecting the city with the neighbouring towns should be wide and imposing, great piers or pylons should be built on the boundary line, which could serve the purpose of distance-indicating posts, and on the outside of these a less formal treatment of trees, hedges, and footpaths will all serve to mark more distinctly the transition from country to town.

The whole city should be designed to present a beautiful mass and outline as seen from afar, and some attempt should be made to define its boundaries, such definition not necessarily being incompatible with the provision for expansion. Wide ring avenues, belts of park land, or fields might help to attain this, whilst streets laid out in the outskirts should be so designed and the buildings so placed as to give a closed-in appearance to their outer ends—gable ends, curbstones, and macadam too often rub shoulders with grass and trees. Beyond the boundaries, too, straggling houses must be banned; inconvenient as they are to schemes of drainage and lighting, they are still more objectionable as eyesores.

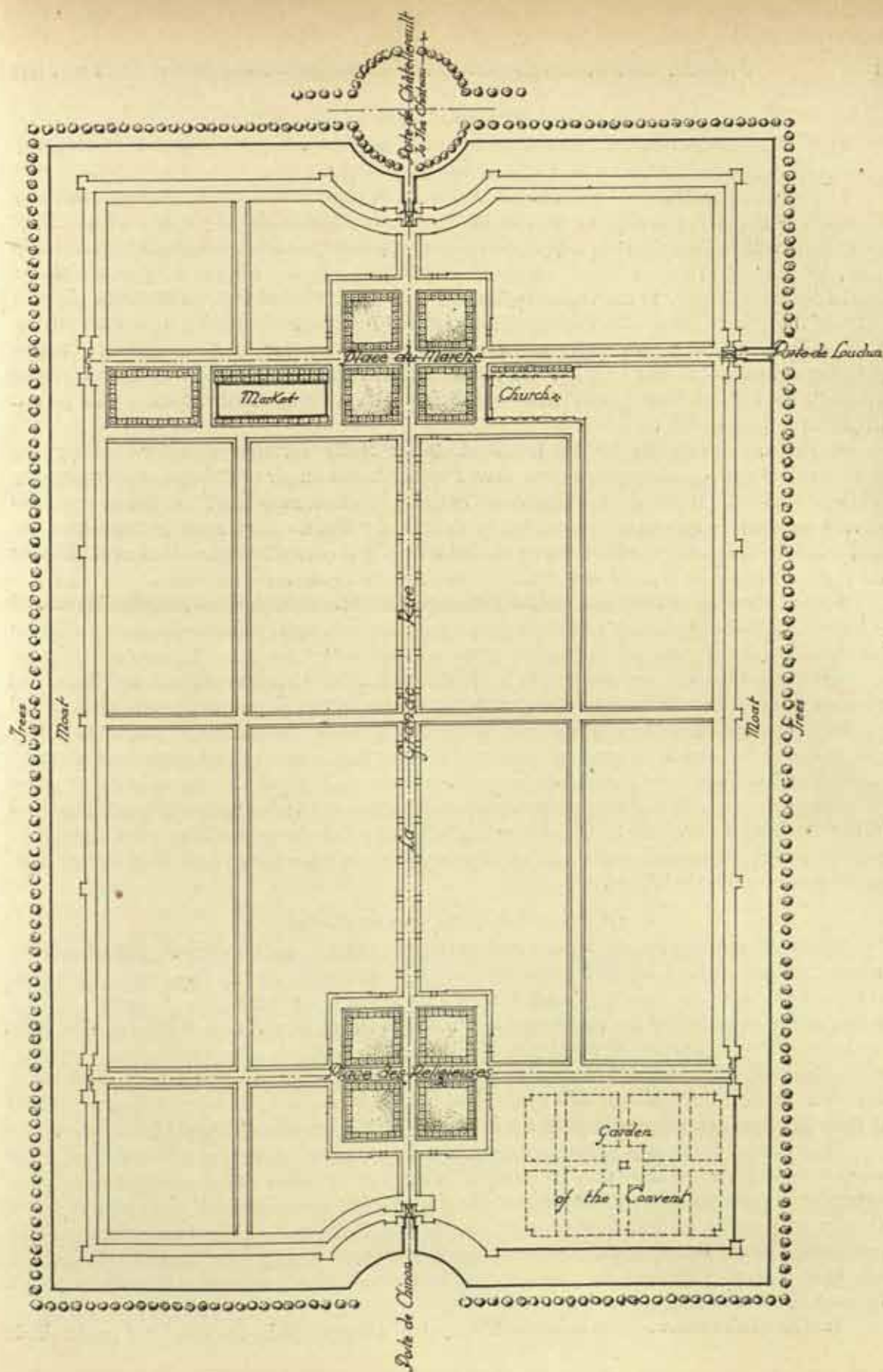


FIG. 7.—RICHELIEU, AS LAID OUT BY J. AND P. LEMERCIER.

(c) The Main Avenues.

From the architectural standpoint these are of twofold value: (1) As determining the development of the scheme, and (2) for their intrinsic beauty.

1. The main traffic lines will always be the chief factors in regulating the growth and expansion of the city, forming as they do the backbone or structure of the city plan. They must then, within such latitude as practical considerations and the configuration of the site allow, be laid out to give a broad, simple, and dignified scheme, helping to give a sense of connectedness and unity to the various parts and areas [fig. 4], and to accentuate the physical centre of the plan. These main avenues will naturally by their connection with the outlying main roads help to link up country and town, an object, however, more effectively obtained by laying out streets so that they have as vistas some distant mountain, hill, or other beautiful prospect, linking up Nature and Art—whilst the formal lines of architecture will give a delightful setting to the view.

2. The avenues should be broad, not alone for traffic facilities, but as befitting the great scale on which an important town should be built, and an air of stateliness may properly be given to them. Buildings forming vistas to these great avenues must be of such size as to provide satisfactory terminations and not be dwarfed by them. Care must be taken that the road levels be continuous, either flat or inclined, dips and curves being avoided as destroying the effects of the avenue itself and in many cases obscuring the terminal vista.

Formal planting of trees and shrubs will make these avenues pleasant promenades as well as traffic routes, and fountains and monuments placed to form focal points to by-streets will give additional points of interest, helping to break up too lengthy a vista. Trees planted in the avenues must have definite proportion in height and width to the street and buildings, and when strips of turf are planted in conjunction with them in the centre or side the plots should be simple and unostentatious in design. By the use of trees, shrubs, and grass, by fountains and monuments, and with good proportion between the height of buildings and width of roadway and well-schemed vistas, interest in the avenue itself should be maintained.

Ring avenues with their constant change of direction and vista afford a delightful contrast to the straight street. At their intersection with the main avenues large open spaces are necessary; here triumphal arches and great pylons may be placed, and suitable sites contrived for important public buildings.

(f) Allocation of the Various Centres.

The position of the various areas—residential, commercial, and industrial—settled, and the approaches and traffic lines laid down, the next step will be to provide focal points and spots of emphasis giving the necessary architectural expression to the plan [figs. 3 and 4]. These points will be supplied by the various centres which practical as well as æsthetic considerations render desirable, civic centres, centres of education and recreation, of commerce and shopping. Such centres should be treated in a generous manner, indicative of the wealth and importance of the town, being formed as they will by its chief buildings, whilst in their treatment something of their function and relative importance in the life of the inhabitants should be expressed.

Centres may be formed in connection with park areas, in connection with water or in the heart of the city, when they may be grouped in some great broad street or round some place or group of open squares; whatever the site they should be so treated as to add as much dignity as possible to the neighbouring streets and "places." The total effect may be increased, and greater importance given to each individual centre, by a judicious linking up, one to the other, with spacious avenues, and in their relative positions in the whole plan a balance of effect is necessary.

1. *The Civic Centre.*—The point for this centre, which must be the chief and predominate

over the whole city, was selected on the first consideration of the site, since to a certain extent it governed the setting out of the main avenues and the general disposition of the quarters, and in laying out the civic and commercial area it was so placed as to be seen from as many points as possible that all might feel it to be the "hub" of the city and city life. This centre will include such buildings as the Town Hall, Law Courts, Public Offices, &c., and round it offices, both public and private (such as legal), will naturally congregate, and provision for them in relation to the chief buildings must be made from the first, assisting as they will in the architectural treatment of the whole centre. The arrangement of the streets and open places in connection with it should be spacious, and they should be so placed and proportioned as to express something of the "pomp and splendour" of the town. This portion of the city will afford the best positions for public statuary.

2. *Educational Centre.*—This centre, including such buildings as museums, art galleries, libraries, and colleges, will, especially if it include a university, form one of the largest. If such be the case, a compromise must be effected here; museums and libraries must be near to the heart of the city, to the people, whilst a university will require a more secluded spot, and ample space for playing fields—even then it may be brought architecturally into touch with the remainder by opening out a vista of it from the square round which the museums, libraries, technical colleges, &c., are grouped. If it be brought actually into conjunction with the other buildings, the large open "campus" such as will then be necessitated will add greatly to the breadth and dignity of the whole and form a noble setting. The necessary residences might be linked together and form interesting features in the scheme. A quiet and dignified effect should be striven for, and an artistic lay-out, well-designed buildings, and good sculpture, happily combined, will have an educational value in themselves.

3. *Recreative Centre.*—This centre, the centre especially of sports and pastimes, offers endless opportunities. Stadia, playing fields, swimming ponds, and playgrounds can be arranged to form a magnificent composition of architecture and formal gardening on a large scale. Physical exercise, occupying as it does so much of our modern life, might be provided for more on such lines as those of ancient Rome, the baths of Titus, with their surroundings, forming a better model than the present-day park playgrounds, playing fields, and scattered baths. This centre will probably form part of the park system, the most healthy spot being naturally chosen, and an effort should be made to form such an architectural whole of buildings, grounds, and surroundings, that, whilst the body is being exercised, the educational influences of an artistic environment may be felt.

4. *Shopping Centre.*—Shops will naturally be formed along the most frequented routes, but the establishment of a market in one spot will lead to the congregation of shops around, and this might form the chief centre. At such spots as this, and wherever any considerable number of shops will be formed together, an attempt to obtain orderly and artistic grouping should be made, and whilst a sense of quiet and enclosure is desirable the whole must have some architectural expression and value in the plan. Too wide a spacing of the streets and "places" will defeat the object of the centre, but great effects might be obtained by the frequent use of colonnades and covered ways, such as those of the Rue de Rivoli, and arcades linking street to street and place to place will in themselves afford excellent opportunities for architectural treatment.

5. *Commercial Centres.*—The stress of business and the bulk of the traffic will demand that here everything be spacious and reticent in design. Sculpture and ornament should be reserved for less distracting spots. This centre, for which Wren's city centre in his scheme for rebuilding London is an excellent model, will contain such a building as an exchange, round which other public or semi-public buildings, banks, and offices will be arranged. These must

all be grouped in an orderly and architectural manner; a centre square, with the lofty office buildings surrounding it, offers great opportunities for a dignified treatment of an essentially twentieth-century problem.

6. *Minor Centres*.—These can be effectively devised for small towns and residential quarters, giving the architectural emphasis which may be there required. Small centres, such as of hospitals or theatres, massing together buildings devoted to the same purpose, will all help to give variety to the plan and break up any too large areas of regular streets and buildings.

(g) *Parks*.

The existing system of dotting about "natural parks" unrelated to one another is bad. The park system should at all times provide a sight of its glories; all parks must be so placed that they may help to adorn the city, and that their benefits may always be felt. The tendency therefore should be to provide a number of gardens and parks—not dotted about, but connected together into one big system by wide boulevards and strips of park-way linking up the open spaces and providing walks and drives about the town.

Land should be reserved for park-ways on the outskirts of the city, thus spreading the value of the system further afield. Such strips of park-way carried out on radial lines will give delightful effects by the contrast of building and cool green trees [fig. 4], and greatly enhance the appearance of the city by creating interesting "voids" in the city's mass of buildings, giving a more open and dignified appearance and affording a pleasant setting to any building or buildings which may be placed in conjunction with them. Under such conditions they should be so planned that their value may be felt over as large an area as possible.

City parks will, perhaps, be placed to separate the commercial areas from the residential, or the resident from the industrial. The nearer to the heart of the city the park is, the more formal must be its character, though the principle to be observed in the lay-out of a park will, of course, depend upon its use. It may be primarily for children, or perhaps a means of education, containing a vivarium, aquarium, botanical or zoological gardens. It may, again, be used as a recreation ground with tennis, football, and other fields, when it will form part of the recreation centre; or perhaps it may be used for music or a parade, as the Bois de la Cambre or Hyde Park are used, though for such purposes as drives a wide ring avenue or boulevard would be much more effective. Parks, in addition to those suggested within the town and of a different type, may be required in large manufacturing districts when the country is far away and inaccessible to the poorer classes. These parks, large in size, should naturally contain as many beautiful features as possible, running streams, hills and dales, and have in addition good views of the surrounding country. No attempt must be made to make unpromising sites look naturally romantic, and, when Nature is not especially beautiful, for man to try to "design" her is false and impossible of attainment.

In designing the parks a sense of spaciousness and scale should be observed throughout, the general plan being laid out on simple broad lines, with quiet masses of foliage and unbroken stretches of grass. On no account must any attempt be made to bring little scraps of country into the town, and the best types to select as models for our parks would be such examples as Kensington Gardens, Hampton Court Gardens, or the Tuileries. When there are no dominating architectural lines a sense of formality and an easily grasped geometrical lay-out become all the more necessary.

These parks will afford excellent situations for monuments and sculpture, to which foliage, perhaps planted in great hemicycles, will form a delightful background.

Road frontages to parks are often desirable, spreading their influence over a larger area. The problem of the transition from the buildings and streets of the town to the park is an important one. A park laid out on simple formal lines will usually easily fall into place, but if

some great avenue run directly up to the park gates, a satisfactory termination to it must be provided, and it would be wise to continue the avenue, in no way cut up, for a short distance into the park, to terminate in some feature such as a monument, which may also form a focal point to which the park avenues may converge. White stone terraces and balustrades, &c., will all help to "carry through" the architecture of the city into the park.

Vistas of groves, woods and parks should be planned for the open places and groups of public buildings, whereby both will gain by the contrast of Nature and Art and more dignified view-points will be obtained for the buildings.

(h) Streets in General.

The various areas and centres of the town's activity located, the large avenues and boulevards laid down, and the position of parks and approaches determined, the development of the city plan will be completed by the lines of the various streets. The disposition of these will have an important ultimate effect on the plan and can do much to accentuate the ruling idea which has so far governed the design. The setting out should be simple and direct, and every line should have a purpose in, and definite relation to, the whole scheme.

Streets, where possible, should converge on to points of interest and show to best advantage the prominent buildings, an effect which streets radiating from some centre will give, providing a splendid series of vistas. Again, some streets in distant parts may be laid out in relation to the chief city centre itself, so giving greater unity to the plan. A "grid-iron" treatment of the whole city must be avoided, but efforts must be made in laying down the lines of the streets to form good building plots and to avoid sites difficult to deal with.

The gradient of the street will materially affect its appearance—a long street will appear less monotonous if on an incline than if perfectly level. Changes in section, longitudinally, of the roads must be carefully considered, they may cut off the view of the terminal vista and have a disagreeable effect; the levels of the roads also must be taken into account in the design of the buildings lining it to obtain a pleasant treatment of the sky-lines. The streets should always be of a width and character suitable to the district they serve. In the main traffic lines the amount of traffic will determine their size, but some definite proportion should be given to the minor streets, both as regards length to width, or width to the height of buildings. The former cannot be easily regulated, and for the latter no hard-and-fast rules can be laid down, but, generally speaking, it will be found that they should either be definitely wide—the width being not much less than twice the height of building—or, when necessary, definitely narrow, high buildings being less suited to broad streets than to those of restricted width. When no vista is provided it becomes all the more important that the street be well proportioned and of interest in itself.

Long straight streets may become monotonous, however imposing the vista; in such cases their too extended appearance may be broken by fountains or monuments, not so large as to spoil the value of the terminal vista, and placed to accentuate the intersection of another street, which intersection may also be widened out to increase the value of the break. The widening out of the minor streets at their junction with the main avenues will, by displacing a certain part of the perspective, create interesting breaks, an effect which may be also obtained by sets-back in the building lines, giving sites for more important buildings, and an opportunity for the introduction of foliage.

Whilst straight streets offer the most dignified approaches to architectural monuments, opportunities should be taken to plan great formal curves, and crescents and quadrants may be with advantage used. Such arcs of circles will give right-angled junctions with streets planned on a radial system, an effect which may be also obtained by bending the two ends of the street to an obtuse angle with the centre. This type of street and the curves will, well treated, afford excellent "closed street pictures," effects which will be all the more

valuable as a contrast to the wide, open avenues. When two points have to be joined together, if the line connecting them forms awkward angles with the places around these points, the ends may be curved with good effect, and thus afford regular junctions.

The junctions of streets require careful management; merely canting the angles of the buildings does not give a sufficiently dignified treatment. It would be better that they should be widened out, to form circuses or other shapes, and thus give better sites for buildings and opportunities for their successful treatment. Streets intersecting at various angles should be avoided, since they form sites difficult to treat satisfactorily, and careful proportioning between the width of streets and the buildings between them is always necessary. An attempt should be made to provide a satisfactory vista to each incoming street.

Care must be taken to avoid spoiling any feeling of breadth and continuity by bringing too many cross streets into another street, and when brought in they should be reasonably spaced apart to leave good building blocks between.



FIG. 8.—THE WATER FRONTAGE TO A PUBLIC BUILDING

Footpaths should be broad and carefully proportioned to the width of road. They need not be paved for their full width; when trees are planted strips of grass or of gravel may be laid down, and in the former the tram-lines could be made to run.

In the heart of the city important centres with their public buildings may be linked together by wide streets giving a continuous impression of spaciousness and increasing greatly the value of each individual centre. Such streets might be primarily "show" streets, and be of great width, with gardens and statuary in their centre and amply planted with trees.

In the residential areas difficulties will arise in laying down the lines of streets, for these districts will usually be on hilly ground giving new problems in street plotting. Here lines that may appear to be formal on paper will not necessarily be so in reality. Long lines of buildings should not attempt to "climb the hill" but should be made to run on one level, and the effect of the sky-line considered. Broad terracing would here be an effective solution.

In the width of streets in residential parts a greater latitude will be allowable. Streets which are not thoroughfares, but serve only groups of houses, need not be wider than will allow two vehicles to pass, though the distance apart of the houses will be much greater. Gardens to houses which face important roads must be treated by the town-planner in a continuous and broad and simple manner, making the strips of garden form part of the roadway in effect, the only sub-division being a stone curb, low wall or hedge.

[To be continued.]

THE CHURCH OF ST. IPPOLYTS, HERTS.

By WALTER MILLARD [A.]



Photo by Letchmore, before the restoration in 1978.

ST. IPPOLYTS, HERTS.

THE fabric of this church presents a good typical example of the growth of an English village church. It affords a fair illustration of the main lines on which so many of our mediæval churches have expanded by stages into their present form. In this instance, each stage of the growth happens to have taken place without actual obliteration of the main outlines of the previously existing structure. Hence it is possible for us to read here, with more ease than in many instances, the course of the building through the four centuries or so that it covered in arriving at its present form.

In the vast majority of instances our parish church structures have grown from one of two types of original fabric, viz.: (1) that of the simple nave-and-chancel plan, and (2) that of the central-tower plan, i.e., having a tower planted in the middle, between nave and chancel—sometimes flanked by transepts, sometimes not. This central-tower plan gave us most of our larger churches, including abbey-churches and cathedrals. In our own district we may see standing examples of the central-

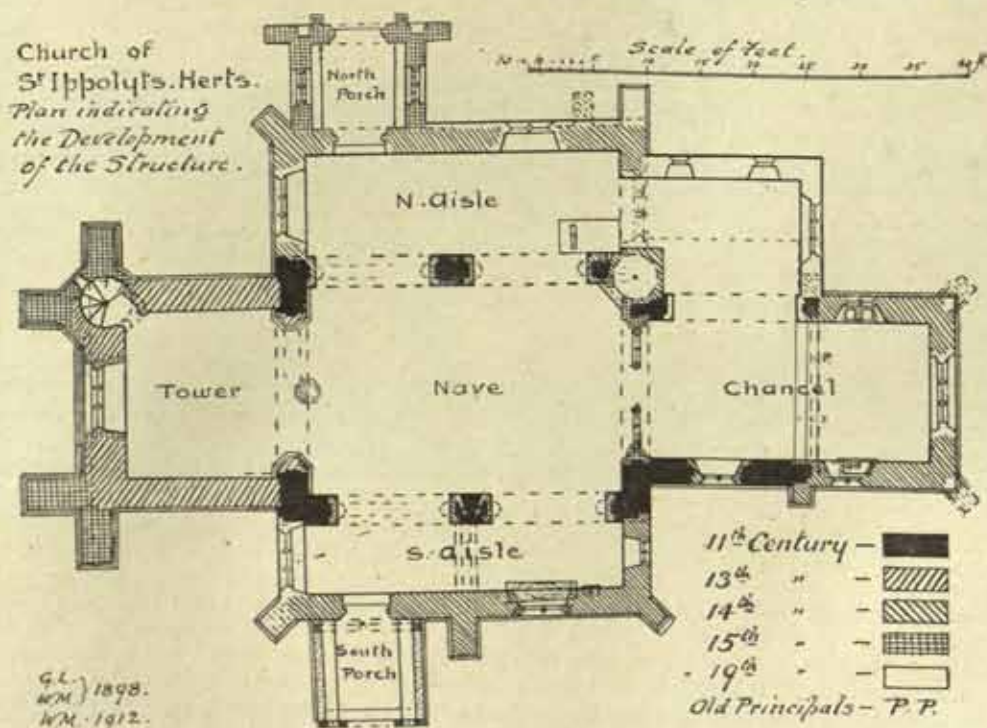
tower plan, of early form, at Pirton and at Weston. Of the simple nave-and-chancel plan we may point to Letchworth Church as an example remaining to this day only slightly expanded, and to Minsden Chapel as an unexpanded but comparatively late specimen of the type. Here, at Ippolyts, we have an instance of this simple plan first built and then expanded by the addition, from time to time, of a western tower and of side-aisles to the nave, by an eastward elongation of the chancel, and finally by the throwing out of porches from the aisles, one to the north and another to the south. At this stage the development of the building was arrested. No side-chapels came to be built alongside the chancel, in the form of aisles, and no clerestory was ever thrown up on the nave or chancel walls; as did happen often enough—for example, at St. Mary's, Hitchin, and at St. Nicholas', Stevenage, to name two instances in this neighbourhood.

Still, as it is, St. Ippolyts Church remains the furthest developed of the six old churches nearest to Hitchin (as I had occasion to note in a brief account, given some fourteen years ago, of the churches of Letchworth, Willian, Great Wymondley, Little Wymondley, Ickleford and Ippolyts). How it happened that one church expanded more

* Read in the Church before the East Herts Archaeological Society, on their 44th excursion, 29th August 1912.

fully than another may be a subject worth consideration by archaeological inquirers, for herein, surely, lies some local history. Considering what its church-fabric must have been to a village in the days of church-building, we may fairly regard the extent and manner of structural development in the fabric as some index of the prosperity of the parish as time went on, some evidence of the means and aspirations of the parishioners. Here we find a church-fabric steadily growing from century to century, whilst others round about if not remaining unenlarged, at any rate expanded at slower pace and to a more limited extent. During some four centuries, Letchworth only lengthened its chancel and threw out a porch; Great Wymond-

the end of the eleventh century. To this building time the nave is assigned in the Inventory of Historical Monuments in Herts, issued by the Royal Commission on Historical Monuments in England; and I venture to indicate on my plan, as a continuous work with this nave, the south wall of the chancel for about half its length, seeing that the internal angle, formed by the outer face of this wall with that of the adjoining east wall of the nave, is clearly all of one build, constructed as it is on both these faces of what look like Roman bricks reused. Several of the original external angle quoin-stones of the nave remain in position at this, its south-east angle. On its north-west angle original quoin-stones in position also show; and



ley, Little Wymondley, and Willian seem to have each afforded a western bell-tower and perhaps a porch in the fifteenth century, while Ickleford, like Ippolyts, had got its tower apparently in the thirteenth century, and a porch followed in the fifteenth. By way of graphic explanation of the growth of St. Ippolyts Church, I show a plan of the building based on one made some fourteen years ago by Mr. Geoffry Lucas, from measurements we took together. This plan I have now revised and hatched to distinguish, as nearly as I can, the work of each century as it came into the general fabric. In it we may observe that the original nave and chancel still in great part exist as the nucleus of the whole building. This stem, upon which all the rest has been grafted and grown from time to time, must be regarded as work of a date towards

two of those belonging to the south-west angle are visible, though out of their place. The north-east angle got obliterated by the fourteenth-century rood-staircase. These quoin-stones are all of tufa, a rough, porous stone, capable of being squared. The employment of this stone is in itself an indication of early date for the work. It appears also in the splayed jambs and arch of a blocked-up window, showing internally on the south side of the nave, evidently one of the original side windows. Tufa is found used in other churches of this neighbourhood and in the undercroft of the dormitory at Westminster Abbey, a work that used to be attributed to the Confessor, but is now assigned to c. 1090-1100.

I make out the length of the original chancel at St. Ippolyts to be about half that of the chancel as

existing, and conjecture that the buttress now spaced about half-way along the southern wall-face really marks the eastern limit of the chancel at its first building. This buttress is composed largely of blocks of tufa, possibly quoin-stones from this south-east angle reused by the fourteenth-century masons when they came to lengthen the chancel. But, before noticing the fourteenth-century work, I have to suggest, with all deference, in face of the Royal Commission's Inventory, that the first expansion from the original nave-and-chancel plan of this church took place westwards, in the form of the existing tower. The Inventory states that this tower was built immediately after the nave aisles came to be thrown out, in the fourteenth century. Nevertheless, I cannot help regarding the body of this tower as a thirteenth-century work, and therefore built before the aisles. Almost certainly it is not contemporary with these, for their respective arches are differently designed and the tooling on their arch-stones differs in direction, running as it does with the moulding in the case of the tower and across the moulding in the aisle arcades. The present plastered-up condition of the tower-arch piers and imposts obscures the question a little. With the tower goes the font, apparently. It looks as though, having a nave of short proportion, the parishioners had set about enlarging their church by lengthening it westward, and after that expanded it laterally by throwing out first the south aisle, a narrow one, and then the north aisle of wider span. At this same time, too, they prolonged their chancel eastward, to about twice its initial length.

The approximate date of these aisle and chancel extensions is plainly enough marked, by the general design and details of the work, as lying within the first half of the fourteenth century, *i.e.*, before the Black Death (1348-9). The Herts Inventory names c. 1320 for the chancel extension. The south aisle work can hardly be later than this, and the corresponding addition on the north side of the nave must have followed pretty closely, their arcades agreeing in design. These arcades were formed, not, as was so often done, by pulling down all the side walls of the aisleless nave and building piers and arches in their place, but by just piercing openings in the standing walling and then neatly trimming up these gaps with the wrought masonry we see, in the form of arches of two orders, the sub-order being carried at the springing by corbels finely carved as heads.

The main body of the church was now complete, the work remaining to be done, in the following century, consisting only of the two external porches, the angle buttresses of the tower along with its whole upper stage, and the enlarged chancel arch, including its oak rood-screen. Of the accompanying rood-stairs the upper doorway, now blocked, which opened on to the rood-gallery, shows itself of fifteenth-century date, and the lower door-

way, no longer visible, appears with a similar four-centred head in a photograph by Mr. Latchmore, taken before 1878; but it would seem that the stone staircase itself, built on the north-east angle of the eleventh-century nave, must be as early as the fourteenth-century north arcade, seeing that by its position it has evidently governed the planning of this arcade further towards the west than the corresponding south arcade. In the fifteenth century also certain of the window-openings got enlarged and changed in their design, as so commonly happened in our old churches. That the tower buttresses are additions to an earlier body of tower building is clear, the difference in the mortar used in these two works being one piece of evidence that they are not contemporary. As to the probable span of the earlier chancel arch, one can only conjecture that this may have been made about equal to the amount of abutment of solid walling left on either side of it, to the north and to the south, as we see in the nearly contemporary instance at Norton.

The Royal Commission's Inventory perpetuates a nineteenth-century legend that, when the church was restored, in 1878, the width of the north aisle was increased from 6 feet to 9 feet. Apart from the evidence of early photographs, this fiction is sufficiently disposed of by the fact that the fourteenth-century doorway in the north wall has not had its well-moulded outer jambs and arch rebuilt, nor has the fifteenth-century porch beyond it been altered in position. What one finds by measurement is that the external face of the north wall of the aisle has been advanced about three inches, not three feet. The same authority gives the span of the chancel as 22 feet, whereas it measures barely 13 feet; and the tower staircase is assigned to the south-west angle instead of to the north-west.

To review the whole course of the building-story, we find still in position a small and simple edifice consisting just of nave and chancel, both of short proportion, built by the close of the eleventh century in flint rubble with squared angle-quoins of tufa. Quite conceivably these stones, some of which we can view yet on their beds, might have been set by masons who had witnessed the Norman Conquest. Their building seems to have served its purpose until the thirteenth century, when, as I venture to believe, it was lengthened westward by the addition of the tower. Certainly in the first half of the fourteenth century the church was lengthened eastward in its chancel, and expanded laterally by the throwing out of side aisles to the nave. The porches followed in the fifteenth century and the tower was then finished as we see it, with the exception of its lead-covered finial or spirelet, which was shaped as it is in the year 1636, just when the troubles between King and Parliament were drawing to a head. The plumber dated this work in letters of lead, having capped his spirelet with a simple cross.

Benslow Lane, Hitchin.

REVIEWS.

OUR CATHEDRALS.

The Cathedrals of England and Wales. By Francis Bond, M.A. Oxon. [Hon. A.]. 8s. Lond. 1912. Price 7s. 6d. net. [B. T. Batsford, 94 High Holborn, W.C.]

The thorough character of the books on the architecture of the Middle Ages by Mr. Francis Bond, causes one to approach his descriptions of the Cathedral Churches of England and Wales with much confidence. In a form handy for reference, he gives an admirable description of the growth of each building, tracing for us not only what actually happened, but surmising with no common insight the operating causes of each work undertaken. Herein he brings out the great charm which attaches to the study of our native architecture, its growing, as it were, under the eyes of the student. It was this that roused the enthusiasm of the architects of the Gothic Revival, who felt that they were studying the steps by which their predecessors had attained to greatness, were learning a progressive art, and preparing themselves to supply wants as they arise and not merely studying precedents or compiling copy-books.

The book interprets its title literally. The English Cathedrals of to-day appear in alphabetical order, and the Welsh follow. On the one hand, the essentially parochial buildings which have become the seats of modern bishoprics appear, while one feels on the other something of a void left by the absence of such noble buildings of the very first class as Westminster and Beverley.

There is a clear statement of the circumstances under which each building attained to Cathedral rank, which removes all mystery as to why such venerable sees as Canterbury and Rochester should have Cathedrals of the "new foundation."

One admirable feature is that all the ground plans are given to the same scale—100 feet to the inch—and these plans become suggestive of the history of the sees. Compare the great mass of Lincoln, with a diocese extending from the Humber to the Thames at Dorchester, and the Cathedral at Chichester serving only the single county of Sussex. The dark solid plan of Durham suggests the Prince Bishop set on a rock to rule the Northern border, armed alike with the swords spiritual and civil. This historical suggestion is the more remarkable as the general scale of the buildings was, as a rule, fixed early in the age of Cathedral building, at the end of the eleventh or early in the twelfth century. The border Cathedral of Carlisle was begun on a scale such as may be found commonly in Scotland, and, as to its transepts and the existing portion of its nave, so remains; but in the thirteenth and fourteenth centuries a choir on a magnificent scale, with a most beautiful east window with flowing tracery, was added, giving rank to the cathedral as an architectural monument.

The plans of Wells, Exeter, and Lichfield surprise

by their comparative smallness, but the buildings themselves demonstrate how little architectural value depends on mere size. The rich valleys of Somersetshire found their architectural expression in the sculpture of Wells and the beauty and completeness of the buildings surrounding its Cathedral.

Mr. Bond's illustrations are admirable, and well selected as far as they go, but naturally require supplementing by any who would follow their guide through the description of each Cathedral.

The author's plan is to take us through each stage of building, beginning, as the more general rule, with an early nave in the eastern bays of which the canons or monks had their stalls, transepts with one or more absidal chapels to the east, and a large central apse in prolongation of the nave.

Three special reasons are pointed out for the alteration and elongation of the church eastward; first, the desire for more internal light than the heavy early architecture afforded; the need of a processional path round the east of the church behind the high altar; and the necessity of providing additional chapels and side altars, as the foundations of the establishments were enlarged.

It is in giving reliable detail to enable one to follow out these enlargements that the main value and charm of the book consists. The study is, of course, profitable and pleasant in proportion to one's knowledge of the particular building.

One other reason for enlargement must be given. The provision of the shrine for the relics of the saint connected with the Cathedral and diocese, and provision for the worshippers thereat. The eastern end of Canterbury well illustrates this, for there was the shrine of St. Thomas à Becket, the most popular and, we may probably add, the most profitable saint in Europe during the Middle Ages.

Where the history can be simply told in a few sentences, as at Salisbury, Mr. Bond becomes critical but by no means less interesting.

It is specially interesting to observe the views of one so steeped in the knowledge of Gothic architecture on St. Paul's in London. He does not spare the flying buttresses and screen walls of the aisles; in fact, he illustrates them. On the main cornice running round the interior and shutting off the clerestory he is severe, but he spares the pilasters beneath it with their heavy Corinthian capitals, which any thoughtful student of the new Roman Cathedral at Westminster must wish away. The exterior, in common with the rest of us, he thoroughly appreciates. In fact, the relative success of the inside and outside of the vast building, with its solid plan, suggests that while the ecclesiastics of the seventeenth century were a little uncertain what to do with so vast an interior, the general public had no doubt that they wanted a majestic structure to gather the many churches and buildings of their city under its wings. Although the chickens have grown larger, the mother hen is still efficient.

One is inclined to think that Mr. Bond hardly does justice to Pearson's Truro. Though it be on archaeological lines, it may well be supposed that this met the views of the donors. Neither the size of the town nor the circumstances of the county called for such a modern departure as is being attempted at Liverpool, a work shown by the plan to be far in excess of our largest minsters.

The Cathedrals of Wales terminate the book, and last of all comes St. David's, the one ancient Cathedral of importance which I have not seen. To this we are told "every architectural pilgrim will resort." It is a far cry to St. David's, and I am getting old.

LACY W. RIDGE.

SERVIAN ART.

RARELY have the emotions of a people found more forcible, more vivid, more passionate expression in the work of its artists than was the case with Serbia in the pavilion designed by a Servian architect, assisted by a band of painters and sculptors of the various Balkan States, at the International Exhibition at Rome last year. Reflected in the work of these artists were the pent-up feelings of a people into whose soul had burnt five hundred years of Turkish oppression. The story was told of their sufferings, of their aspirations, of their craving for freedom, and of their determination at any cost to rise one day and crush their oppressor and come into possession of their fatherland again. The purpose of the artists and the manner of its fulfilment are described in a very interesting way by a writer in a recent issue of the *Manchester Guardian* :—

The unforgettable thing in that exhibition was the strange grey building which rose sheer as a fortress or a desert tomb from the grass and flowers and pleasure-walks of the exhibition. This was the Servian pavilion. Mounting its steep steps, you were in a different air and time, and aware of a different spirit. You entered a loggia formed of mourning caryatides, down which a sphinx, human save in the wings, stared watchfully and expectantly. Looking between the figures of the loggia you saw groups of widows, whose mourning and hopelessness were expressed in gestures with a primitive directness and force that came as a shock to most visitors. The loggia led to a small domed hall, in which was a gigantic statue of the hero Marko Kraljevic, the Servian Siegfried, on his snorting horse. Round the walls in tall panels were torsos of Turks, and above was a rhythmic frieze of mingled figures of Serbs and Turks fighting. On either side of the hall were arched gateways, and inside the arches were grotesque heads of Turks set in panels, two deep all the way round. You descended steps supported by crouching figures that seemed to symbolise the Serbs in captivity—gaunt, worn men with beards, their hands, palm downward, extended flat, a sign of subjection and of insufferable strain.

In the outer rooms were paintings illustrating the Saga of Marko, culminating in a cartoon, with something of the stark imagery of the sculptor, showing "Marko dividing the Empire." There was an extra-

ordinary fury and purpose in every part of this strange building that moved one like the sight of blood and the call of trumpets. The contents of the pavilion were described as "fragments of the Temple of Kossovo," the name of the fatal field where the Servian nation went down, to remain in subjection for five hundred years.

The pavilion was designed by Professor Bagalovic, of Belgrade. The idea of the "fragments of the Temple of Kossovo" was that of Mestrovic, who designed most of the sculpture and gave his imprint to the rest, Toma Rosandic, Nico Bodrozic, and D. Penic being his chief collaborators. Mestrovic is a Servian, but the group of sculptors and painters gathered around him are Croats, Montenegrins, Bosnians, and Dalmatians. Under the name of Serbia are re-assembled in this movement of art the kindred forces of these different States and communities that once were parts of the Servian Empire that fell to pieces at the death of Douschan on the field of Kossovo, just as several of them now are joining arms against their old conqueror in Macedonia. That national jealousies did not prevent these artists from working together under the flag of Serbia and under Mestrovic's leadership in Rome in 1911 is surely a great augury for future brotherhood when the war is over and frontiers are to be redrawn. It is a national effort, inspired by a single fury of national hate and aspiration which is without parallel in modern art. The memories of their common past, with its humiliations and sorrows kept alive by the constant incoming of fugitives from the Turkish oppression in Macedonia, are here seen not only to have made possible their federation, but to have inspired their art. Mourning women, desperate heroes, advancing Turks, moving stealthily, their head lowered under a guarding arm, their right hand behind them with the ready sword, conveying a strangely sinister apparition; Turks' heads forming a grinning garland to a doorway; crouching figures under great weights staring desperately into the future or borne down by their oppression—all these give an impression that the mind of an imaginative people moving in half-barbaric terms at a dilated moment of their destiny was unveiled before us.

Ivan Mestrovic, to whose genius we owe the idea and the main part of these "fragments of the Temple of Kossovo," was for years a shepherd on his father's mountain farm. His inspiration was the folk-song and poetry of the country, and something of the starkness and grandeur and terrible silhouettes of the wild hills seems to remain in his work. His subject was the death and resurrection of the Servian race. One legend especially haunted him—the legend of the hero Marko Kraljevic, who lies, like King Arthur, in the heart of the mountains, guarded by national spirits, with his sword planted in the rock beside him, waiting for the day of revenge. . . . And now the triumphant army has ridden through old Serbia into Uskub, where their great Emperor Douschan was crowned.

It is a safe prophecy that in Mestrovic we see the most organic force as well as one of the most subtle craftsmen ascending in modern sculpture. In Marko we find a painter with a power of design equal to this gigantic thing, and among the other sculptors and painters we find a glow of sincerity and passion that has wrung from their material more than their skill had perhaps the right to demand. But in their works the manner by which the effect is produced is what one last comes to think about. It is the burning spirit that lives within it and seems to throb and gesture through these forms as a tempest.

Here we find that rare thing in modern times, art, at the service of a profound national emotion, forerunning a mighty and terrible crusade.



9 CONDUIT STREET, LONDON, W., 7th December 1912.

CHRONICLE.

Use of Letters "R.I.B.A.": Action in High Court Injunction.

ROYAL INSTITUTE OF BRITISH ARCHITECTS v. REYNOLDS.

This was an action for an injunction to restrain the defendant, Mr. Harry H. Reynolds, of Birmingham, from using in connection with his business as an architect the letters "R.I.B.A." in such a manner as to lead the public to believe that he was a member of the Royal Institute of British Architects.

The case was heard before Mr. Justice Warrington in the Chancery Division of the High Court on the 15th November, and as a result a perpetual injunction has been granted in the following terms:—

"Upon Motion for an Injunction this day made unto this Court for the Plaintiffs and upon hearing Counsel for the Defendants and upon reading the Writ of Summons issued in this Action on 12th November 1912 and the Plaintiffs and the Defendant by their Counsel consenting that this Motion should be treated as a Motion for Judgment and consenting to this Judgment This Court doth Order and Adjudge that the Defendant Harry Horatio Reynolds be perpetually restrained from using in connection with the business of an Architect or Surveyor or otherwise at all the description or letters R.I.B.A. after his name either alone or in combination with any other letter or word or any other description or letters and from carrying on business in such manner as to tend to represent or lead to the belief that he is a member of or that he or his business is in any way connected with the Plaintiff Institute And it is ordered that the Defendant Harry Horatio Reynolds do pay to the Plaintiffs their costs of this Action such costs to be taxed by the Taxing Master in case the parties differ."

THE BUSINESS MEETING, 2nd December.

The late Mr. Norman Shaw, R.A.

At the opening of the proceedings at the General Meeting of the Institute last Monday, Mr. E. Guy Dawber, addressing the Meeting from the place of

the Hon. Secretary, said it would not be fitting that the occasion should pass without reference to the melancholy event which had taken place since they last met in that room—viz., the death of that great architect Mr. Norman Shaw. So much had been said about him in the professional journals and in the public Press that it was unnecessary for him to dilate upon his remarkable powers as an architect. They would all agree that Mr. Shaw was one of the pioneers of English architecture; he had done more for their art, and especially for domestic architecture, than any architect in Queen Victoria's reign. Mr. Shaw had not always identified himself with the policy of the Institute, but they had the sincerest admiration for his work and they all deplored his loss as a great architect.

On the motion of Mr. Dawber the Meeting resolved that the regrets of the Institute for the loss of their art had sustained be entered on the Minutes of the Meeting, and that a message of sympathy and condolence be conveyed to his relatives on behalf of the Royal Institute of British Architects.

The Conduct of the Examinations: Mr. Middleton's Questions.

At the same Meeting, the following notice was on the agenda in the name of Mr. G. A. T. Middleton [A.] :—

To inquire

1. Whether it is true that while Testimonies of Study for the Intermediate Examination had to be submitted by 28th September, those candidates who were relegated were only informed by letter dated 8th November and posted so as to reach even London residents late on 9th November, when they were required to furnish alternative drawings by the morning of 15th November; and, if so, whether in the opinion of the Examiners this is reasonable.

2. Whether the Board of Architectural Education is aware that there are rumours of laxity in permitting candidates to leave the room temporarily during the progress of the examinations, and in allowing communications to pass between the candidates.

3. Whether, at the Final Examination, the fact that a candidate is young is of itself prejudicial to his chance of success.

THE CHAIRMAN (MR. ERNEST NEWTON, A.R.A., Vice-President) having called upon Mr. Middleton,

Mr. MATT. GARBUTT [F.], rising to a point of order with reference to the first question, asked if it was within the province of the Examiners to express any view at all upon the point, seeing that it was a matter with which they had nothing to do.

THE CHAIRMAN said that it was desirable that the question should be answered, and if it met with the approval of the Meeting, he proposed, as Chairman of the Board of Architectural Education, to give the answer himself. The Testimonies of Study, according to the regulations of the Institute, were either taken or rejected, but a custom had grown up by which a candidate was given, as an act of grace, an

opportunity of re-drawing any sheets which, in the opinion of the committee which examined these Testimonies, did not come up to the standard. There were a large number of drawings to be gone through, and it was impossible to examine them the moment they came in and to give the candidate this benefit immediately. But the candidate was informed as soon as possible that certain sheets should be re-drawn and sent in, so as to give him an opportunity of sitting for the examination.

Mr. MIDDLETON said he understood that. But there were some who thought with him that it would be better to accept or reject the drawings, and not to give the opportunity of submitting fresh drawings. To give, as was the case in one instance in the recent examination, only four days for the preparation of four sheets certainly seemed unreasonable, and the Board apparently admitted this themselves, because upon the candidate's complaining of the short notice he was given a few extra days. If time were allowed at all, it should be sufficiently long to enable the candidate to do fair justice to his work. He did not know whether the Examiners quite understood the circumstances under which some of the drawings were prepared. Many of the candidates commenced their Testimonies of Study quite a year before sending them in, and they finished them gradually one by one. When the time came for sending them in, they would find, perhaps, that those which they had prepared a year before were below their present standard, and they relied upon being given the opportunity, in accordance with the present custom, of re-drawing unsatisfactory sheets. They submitted them in the expectation that if any were rejected they would have time to prepare fresh drawings of the required standard. But if they were not allowed sufficient time, how could they possibly do it? He hoped that if this custom were to be kept up, candidates would be allowed sufficient time to do the work.

THE CHAIRMAN, in reply, said that most of the candidates whose work was returned managed to find time to produce very much better drawings than those which had been rejected; and he thought that if the matter were pressed too closely it would eventuate in this act of grace being discontinued, and the candidate would then lose the chance of re-drawing his sheets and sitting for the next examination. He hoped Mr. Middleton would consider that.

Mr. MIDDLETON, putting his next question, said that in this case again it was impossible for him to mention names, but he had heard of laxity, and not only in one particular case. At the last Final Examination, and at a preceding one last year, while during the Design paper nothing could be gained by a candidate's leaving the room—and very few did, if any—yet during the subsequent papers, when anyone who had notes in his pockets might have gained by consulting them, certain candidates went out paper after paper. Then, again, the desks were a great deal too close; candidates could see very easily indeed what was being done at neighbouring desks. Again, words could be passed between them. He should say that there were too few moderators; they could not possibly see everything that was going on. This last week he had heard that in two or three cases actual letters or notes were allowed to be delivered to the candidates without being opened by the moderator first, as he believed was always the custom in such cases. If there were any truth in these rumours, it would show that the whole conduct of the Examinations required stiffening up.

THE CHAIRMAN said that Mr. Middleton's question was something in the nature of a serious charge. After

all, rumour was not generally conspicuous for its accuracy, and this amounted to a charge of laxity against the moderators. In the circumstances, if any moderators were present he would ask them to speak.

Mr. W. H. BURY [A.] said that if Mr. Middleton had any evidence to bring forward of cheating at the examinations, it was his duty to formulate a case and bring it before the Board of Education. He himself had on several occasions acted as moderator, and he was quite sure that no one had cheated in the examination room while he was present; and as for notes being passed, it was absurd. Most of the candidates came up from the public schools, and public-school men had public-school morals. Though they might crib in class at preparation, to cheat at an examination was considered a most heinous offence in public school life, and he was convinced in his own mind that Mr. Middleton's accusations were groundless.

Mr. K. GAMMELL [A.] said he had had the honour to act as moderator in the old days when the examinations were held at the Embankment Hall, and the only complaint he had to make was that some of the candidates rather resented his ruling that they should not smoke during their work. With regard to the accusations of cheating, he failed to see how the acts referred to could be of the slightest avail to anybody in the examination, because they had to come before the examiners personally for their oral examination, and the examiners would not be easily humbugged by any man who had made an illicit use of notes. He suggested that Mr. Middleton had lent too ready an ear to complaints of perhaps disappointed candidates, who may have been relegated in certain subjects. He could not help thinking that if he had known the actual facts he would not have brought these charges.

Mr. T. C. YATES [A.] said he had acted as moderator, but he had never seen one candidate speak to another, and neither had a candidate ever asked to leave the room while he was in charge. If a candidate had not understood a question, he would come to the moderator himself in order to have the point made clear.

Mr. G. ERNEST NEILD [F.] said it was a good many years since he had acted as moderator, and at that time he had seen nothing at all which was wrong. He was sure, however, that Mr. Middleton had brought this matter forward with the best intention.

Mr. A. R. CONDER [A.] said he had acted as moderator on four occasions. He had never seen candidates communicating with one another, and he had not noticed that they left the room for improper purposes. He thought Mr. Middleton's remarks would be of much greater value if he named particular instances, instead of making a general statement and general charges.

Mr. MATT. GARBUTT [F.] said it was probably not possible in the circumstances for Mr. Middleton to bring absolute evidence, and therefore it was a pity that the matter was brought up to be discussed in that room.

THE CHAIRMAN said he quite associated himself with the moderators who had said they were certain Mr. Middleton had brought this matter forward in good faith, and he should like to ask Mr. Middleton whether he was satisfied with the statements made by moderators. His inquiry was "Whether the Board of Architectural Education is aware that there are rumours of laxity in permitting candidates to leave the room temporarily during the progress of the examinations, and in allowing communications to pass between the candidates?" As Chairman of the Board, he answered that question in the negative.

Mr. MIDDLETON said he was only asking for information, but he did hope that, particularly when both

rooms were full, there would be two moderators instead of one in the future. It was too much to expect that one moderator could look after all those candidates.

Mr. ALLAN GRAHAM [F.] said that these were only rumours; they could therefore give them the value which usually attached to rumours. He had himself acted as moderator, and had kept his eyes open all over the room; he was quite sure no man could go through that examination by cheating, because he would not have the knowledge to apply if he snatched anything in that way.

Mr. MIDDLETON, bringing forward his third inquiry, said that this again was something which had got about among the candidates, and he should like it to be fully denied in that room. It was for that reason that he had put it on the paper. The case he had in his mind was of a candidate who was now an Associate, so he could give his name without prejudice to him, if necessary. He was a young man who was sent back, in Design only, about a year ago or a little more. Whether he was rightly or wrongly sent back he could not tell, as he had not seen the design. It was possible that, like other clever young men, he did excellent work occasionally, but occasionally also did bad work. He came up six months afterwards, and the Examiner's remark at the Oral was, "Oh, I remember you; you did very well, but I thought you were young, and that another six months would not do you any harm." That gave the impression that the mere fact of his being young had caused his being sent back; that he had satisfied the Examiners, but was considered too young to pass. That sort of thing was not right, and if it was possible it should be denied. It may have been that the Examiner said something which was misinterpreted. Anyhow, it had got about, and young men were kicking against it.

The CHAIRMAN replied that the Board had no knowledge of cases of that sort. If any specific case occurred, and any candidate felt aggrieved, the proper course would be to bring the matter before the Board, so that the matter could be inquired into. He hoped that answered the question sufficiently.

Mr. WM. WOODWARD [F.] said that the difficulty in this particular case, and in all such cases, was this: That in order to make the meeting thoroughly understand the ground of the complaint the name of the individual who had made the communication should be given. But he quite understood that it would not be desirable, and perhaps the candidate himself would not desire that his name should be specifically mentioned. He suggested to Mr. Middleton—and the Chairman had already anticipated what he was about to say—that in all such cases he, or anyone else who heard of specific cases of the nature mentioned that evening, should address a confidential letter to the Chairman of the Board, and he was perfectly certain that that communication would be treated in a proper manner by that gentleman. The Chairman would then be able to answer the specific allegations, and would not have to deal with general accusations such as Mr. Middleton had made. He had known Mr. Middleton for many years, and he knew that he was quite incapable of making a suggestion of this kind unless some communication had first been made to him. The name of the individual concerned was absolutely necessary if the matter were to be inquired into properly, and he should be given an opportunity of supporting his statement. He would then have the advantage of a word with the Chairman, which would settle all these questions.

Mr. J. ANDREW MINTY [A.] writes:—"I also have acted as moderator on several occasions; and whilst I

would not say that 'cribbing' by students under examination was impossible, I do say that that is practically impossible under any moderator of average sharpness. As to students going out of the room during the examination, I cannot recall a single instance of a student asking for permission, or being out of the room for any purpose whatever, during the progress of a paper."

Architects tendering for Designs: Mr. Angel's Motion.

At the same meeting, Mr. Robt. J. Angel [A.], in accordance with notice, brought before the Institute the question of architects tendering for the preparation of designs, &c., of buildings, and in particular an instance of certain architects who submitted tenders to the Wigan Education Authority for designs, &c., and quantities for the erection of a High School for Girls.

Mr. ANGEL said that in bringing this matter to their notice he should like the Meeting to know that he held no brief for any particular architect or any number of architects. His information, in the first place, was derived from a paragraph in *The Architect*, and how it came into print was as follows—he should mention that he had derived the information from the Minutes of the Wigan Council, which he had procured for the purpose: The Education Committee of the Borough of Wigan appointed an architect, and when the matter came up for confirmation at the meeting of the Council itself, the architects of Wigan—about half a dozen of them, he believed—wrote a letter to the Council asking them, instead of appointing an architect, to put up the buildings to competition. He referred to this matter because in the debate which took place afterwards at the Council they declared that they had instituted a competition—but this turned out to be not quite of the kind which the Institute understood by the word. The result was that an advertisement was put in the local newspaper, the opening portion of which ran: "Applications are invited from architects practising in the County Borough of Wigan for the office of Architect for the proposed new Girls' High School. Applications, endorsed 'Architect,' giving particulars as to qualifications, experience, and stating remuneration, to be sent to the undersigned not later than" a certain date, and so on. In response to the advertisement, the Committee received tenders, particulars of which were given in the Minutes as follows: "The following tenders in connection with the office of architect for the proposed new Girls' High School, in accordance with the terms of the advertisement, were opened." He would omit the names of the architects, and give only the tenders. The first quoted "5 per cent. on the cost of the buildings, plus 1½ per cent. for quantities." The second "5 per cent. on the cost of the buildings, plus 1¼ per cent. for quantities." The next the same terms as the first. The next one, an "inclusive fee of 5 per cent., made up as follows, 3½ per cent. for drawings, &c., plus 1½ per cent. for quantities." The next in order tendered the same as the first one. The last one was "3 per cent. on the cost of the building, plus 1½ per cent. for quantities." This led to what they at the Institute would consider to be a breach of the rule that an architect should charge so much according to the scale laid down in the Institute Schedule of Charges. To his mind two grave things in connection with this matter had to be considered. The first was that the Corporation placed architects upon the same footing as they would a builder, by inviting him to tender. It was not so

much that they should get the names of competent architects, as that they should get these prices, because it was mentioned in a local paper that they could save £150 by employing Mr. So-and-So. This latter gentleman was rightly ruled out by the Council, the majority of whom voted for the architect whose charge was 5 per cent. and 1½. He had put the facts before the Institute, and he would conclude by moving that the question be referred to the Practice Committee to consider and, if necessary, report upon. The President, to whom he had mentioned the matter, suggested that he should adopt this course. It was unnecessary for him to point out that when architecture was put on the basis of pounds, shillings, and pence, the question of art would go to the wall immediately. One reason for his bringing the matter forward was that one of the architects who tendered was a Fellow of the Institute, another was an Associate, and three of them were Licentiates. He therefore moved that the matter be referred to the Practice Committee, and he would hand over to them the various papers he had collected for his purposes.

The CHAIRMAN said he thought the course suggested was quite the proper one, that it should be referred to the Practice Committee to be considered and thrashed out.

Mr. G. HASTWELL GRAYSON, M.A.Cantab. [F.], seconded. There was a great tendency, he said, on the part of many of the small municipalities in Lancashire to bargain about everything. They were comparatively small men, who had had very little education, who were accustomed to bargain about everything, and they could not help carrying their bargaining into professional work. They had no idea of professional etiquette, and it required dinning into them on every occasion. He hoped the Practice Committee would be able to do them some good.

Mr. FREDERIC R. FARROW [F.] said he thought that when this matter came before the Practice Committee it should be brought before them with the full facts. The Fellow of the Institute who was appointed as architect was appointed first of all before any question of a competition was raised. After he had been appointed by the Sub-Committee, certain other architects wrote this letter and suggested a competition. Of course, they all reprobated the idea of architects tendering for work; that was contrary to their best instincts; but it would have been very hard on this gentleman who had been appointed if, because it was against the principle of the Institute, he had withheld his name, and allowed men in the town who were not members of the Institute, and not bound by their feelings about attempting to obtain this work, to obtain it by a side-wind. That point should be brought before the Practice Committee when they were considering the matter. It was worth noticing that all the architects who tendered, with one exception, tendered on quite reasonable professional lines; they wanted 5 per cent., the recognised fee, and they all asked for 1½ per cent. for quantities, with the exception of one, who asked 1¼ per cent. He did not know whether they were the charges of the Quantity Surveyors' Association for schools, but he himself had built many schools, and he knew that 1½ per cent. was considered by quantity surveyors a fair remuneration. So none of the architects who tendered attempted to under-cut, with the exception of one. And the firm who did under-cut the others was among those who signed the letter trying to upset the architect who originally had got the job. He had no objection to the matter being considered by the Practice Committee, but they ought to have the full facts before them. When it came before the Borough Council there were a number, as was generally the case

with these small bodies, who made a great point of the low charge at which other men were willing to do the work. The strong point of those who upheld the recommendation that the architect who was originally appointed should have the work was that he had done the largest amount of school work and was most experienced. The decision of the Council, therefore, ultimately, was thoroughly sound; it was given to the man who, in their opinion, had had most experience and was best qualified, although his charges were higher than some of those who tried to under-cut him. He thought that in this case, although technically a Fellow of the Institute had tendered, he was quite justified in so doing, and, seeing the class of people with whom he had to deal, nothing unprofessional had taken place.

Mr. W. E. VERNON CROMPTON [F.] suggested that the Practice Committee should place themselves in communication with the Liverpool Society of Architects, who, being on the spot, might be able to give assistance on the matter.

Mr. ANGEL said that the only question he wanted the Practice Committee to consider was, first of all, the act of a corporation, or any other body or individual, in asking for tenders from architects. The whole principle was at stake, for presently it would come down to the local greengrocer asking architects to tender for the design of a shop he wanted to erect. The second thing was that members of the Institute ought not to tender to anyone, or say publicly what their charges would be for erecting a building. He knew well that a very fine line could be drawn. A man intending to build, and not knowing anything about it, might write to an architect asking what his charges would be. The information would be useful upon which to base his estimates for the building, so that he might cut his coat according to his cloth. But architects should object to his issuing a public tender. He (Mr. Angel) was absolutely disinterested in bringing this matter forward, for he served a public authority and did not practise himself. He had no axe to grind, and therefore could speak more freely than some others present. Supposing his Council invited tenders for the erection of artisans' dwellings he should be inundated with questions, "Why didn't you advise your Council differently?" It was as wrong for a Council to ask for tenders as it was for members of the Institute to tender. He agreed with what Mr. Farrow said, and was glad that the original architect was appointed. He thought it was very wrong indeed for the other five firms to have tried to cut that gentleman out; in fact, it came under one of the points on page 14 of the *Kalendar*, under the rules of professional conduct, that no member shall attempt to supplant another architect when he has been appointed. Those who were members of the Institute ought to be censured for so doing. But that was a matter he wished to keep out of, and he wanted the Practice Committee to keep out of it. It was solely the question of tendering. There were six rules of professional etiquette laid down for them, and he should like to see a seventh added: "No architect, a member of the Institute, shall tender for the erection of any building."

The CHAIRMAN: That will be a matter for the Practice Standing Committee. The request is divided into two parts: The first is that the Practice Committee should pronounce on the rightness or wrongness of a corporation or any other body inviting tenders; and, secondly, on any architect tendering in response to the invitation. That is the matter you wish put before the Committee?

Mr. ANGEL assented.

Mr. W. HENRY WHITE [F.] said that it was a very

opportune moment for Mr. Angel to have brought this matter forward, because they were considering the revision of the Scale of Charges. With regard to small shopkeepers inviting tenders, it was not an unknown thing in the provinces. Provincial men would support him when he said that it was not at all unusual for small local men to go to several architects and practically put them into competition. If they could do something, by a strong recommendation in the JOURNAL, that it was considered not in accordance with the principles of the Institute that members should tender, except by saying that their charges would be based on the Institute Schedule, it would be well.

The motion, having been put to the Meeting, was carried unanimously, and the proceedings then terminated.

Professional Advertisement.

The following letter has been addressed from the Institute to the Councils of the Allied Societies in the United Kingdom:—

2nd December 1912.

DEAR SIR,—The Council of the Royal Institute of British Architects have directed me to ask you to be good enough to call the attention of your Council to the following Resolution which appears on page 13 of the R.I.B.A. Kalendar:—"That it is undesirable for architects to exhibit their names on boards or hoardings in front of buildings in course of construction," and to say that they will be glad if your Council will kindly take steps to bring this Resolution to the notice of the members of your Society. A similar request is being transmitted to the Councils of all the Allied Societies in the United Kingdom.—I am, dear Sir, Yours truly,

IAN MACALISTER, *Secretary.*

Christchurch Priory.

To reassure any who may have felt alarm for the integrity of this beautiful old church in consequence of the charges made by the Society for the Protection of Ancient Buildings in their letter headed "Vandalism at Christchurch Priory" [*The Times*, 21st November], Mr. T. G. Jackson, R.A., in *The Times* of the 5th, gives the following summary of the work carried out under his direction:—

The north transept was blocked by an ugly and useless gallery where nobody ever sat, and which, had it been used, would have been a death-trap in case of panic. The floor below was filled with shabby deal pewing, concealing the beautiful arches of the chantries on the eastern side, and the Norman wall arcading on the western, which was barbarously mutilated in order to receive a dado of deal. The floor was broken up and roughly boarded, and the walls were cut to receive the gallery supports. The gallery has now been removed, as well as the deal pewing; the chantries are once more restored to view; the walls have been mended, the floors made good, and new steps of stone and new seats of oak have been provided. Some ancient tiles which were discovered under the modern deal floors, though much broken and very imperfect, have been or are now being relaid.

The angle pier of the chantries was badly split, much of the stonework was crushed, and it had been cut into by the beams of the gallery. Its condition was dangerous, and its repair involved a difficult and deli-

cate operation, which caused me some anxiety. It has, however, been secured by new bonding stones and new masonry in place of what was crushed.

The use of some old colonnettes that were found in the crypt to replace the missing shafts of the Norman arcading was made by the foreman while I was abroad. I should not have allowed it, and I proposed to have them removed, but under the circumstances the vicar and committee have decided that this is unnecessary.

Other instances of vandalism are hinted at but not cited, and are left to your readers' imagination. All the work done to the fabric during the past few years has been of the nature of structural repair. The fourteenth century timber roof which exists above the plaster groining of the nave has been secured instead of being removed, as had formerly been intended. The tower has had the loose parapets and pinnacles repaired, and the masonry cleaned from plants which had done serious damage, a great deal of the facing-stone being forced more than an inch out of the wall. The south nave wall has been underpinned, and the slating repaired throughout. The groining of the Lady Chapel had suffered by the expansion of the ironwork with which it was put together, and the great springing stones were burst and on the point of slipping, which would have brought the whole vault to ruin. They have been carefully repaired, the ironwork has been removed, and the whole of this beautiful ceiling is made sound and secure. Lastly, the remarkable reredos in the choir, which was injured in the same way by its iron cramps, has been carefully repaired and made safe without removing any of the original stone.

This is I believe a faithful account of our vandalism. What we have done to earn this name your readers will now be able to judge. The vandals were more given to destruction than to restoration, and all our work on the fabric has been of the nature of needful repair. Not a single old stone at Christchurch has been touched unnecessarily. The gain to the interior of the church by reopening the transept, and exposing once more to view the beautiful Norman and Early English work, which for more than a hundred years has been hidden by sordid deal carpentry, must be admitted by every one who knew the church in its old state and revisits it now; while to object to the structural repairs above described can only be described as captious and unreasonable.

Victoria and Albert Museum: Recent Acquisitions.

Some important acquisitions have recently been made in the Department of Woodwork in the Victoria and Albert Museum. Three of them are additions to the collection of mediæval woodwork. The earliest is a French casket of the fourteenth century, stated to have come from the Church of the Holy Trinity at Eu in Normandy. The casket, which was presented to the Museum by Mr. Murray Marks, is of oak, gilt, and elaborately carved with Gothic tracery, the mounts being of gilt copper, and the interior painted with the Coronation of the Virgin and the symbols of the four Evangelists (exhibited in Room 51). A pair of oak cupboard doors from Northamptonshire, painted with scenes representing the orders of angels, dating from about 1500, are exhibited in Room 7. Of about the same date is a standing livery cupboard carved with open Gothic tracery; the ostrich feathers which form part of the decoration probably represent the badge of Arthur Prince

of Wales, eldest son of Henry VII. This was found recently in a farmhouse at Burwarton, Shropshire, and was presented by Mr. Robert Mond, F.S.A., through the National Art-Collections Fund (Room 6).

A fine piece of panelling, bearing the date 1546, has been purchased from a house known as Beckingham Hall, at Tolleshunt Major, Essex (Room 52). It is elaborately carved with decorations in the style of the Renaissance, among which are the Royal Arms as borne by Henry VIII. and those of Stephen Beckingham. The old Hall at Beckingham, from which the panelling originally came, was built by Richard Beckingham on an estate granted to him by Henry VIII. in 1543.

The Museum collection of painted wooden roundels (also in Room 52), which were in use in Elizabethan and Jacobean times, has been enriched by a very uncommon set consisting of twelve pieces enclosed in a turned case, each painted in silver and gold on black, with figures wearing costumes of the period of James I.

An important example of early English lacquer is shown in Room 55. This is a cabinet of the period of Charles II., mounted with brass and decorated with raised lacquer in gold and colours on a black ground. The carved stand is silvered; this is an unusual feature, gilt being more usually employed for such a purpose. In the same room is a Queen Anne writing cabinet, stated to have belonged to Dean Swift; it is veneered with walnut and decorated with fine marquetry-work, and is fitted with glazed doors above and with a secretaire below. This cabinet is figured in Macquoid's *History of English Furniture*.

A gap in the historical sequence of English panelled interiors has been filled by the presentation from the National Art-Collections Fund, assisted by a body of subscribers, of a panelled room of about 1730, removed from No. 26 Hatton Garden. The panelling is of pine, with elaborately carved mantelpiece, doorways and recesses. It is exhibited in Room 56.

A fine example of English painted satin-wood in the form of an urn-shaped knife box is placed in Room 57.

The Principles of Ventilation.

The true relationship between fresh air and physical fitness has still to be defined. A writer in *The Times* in an endeavour to throw new light on an old problem says:—

The cult of the open bedroom window has become something of a fad, and you may see in recently built houses windows so constructed that every pane will open by some fanciful device or other. There is no harm in it, but the multiplication of unnecessary openings shows that, as usual, the object has been lost sight of and the open window has become an end in itself.

That conclusion is confirmed by the pursuit of stuffiness in other directions. Great ingenuity is expended on producing a warm equable atmosphere by methods

of heating and of introducing air in such a way that it shall be imperceptible. We have contrivances devised to produce what Mr. Leonard Hill calls "a deadly uniformly heated air," and to exclude perceptible movement and change of temperature. It is against these conditions that Mr. Hill protests: they are the very conditions we find most insupportable on a close summer's day, producing languor and lassitude.

"Life," says Mr. Hill, is "the reaction of the living substance to the ceaseless play of the environment." All its manifestations may be regarded as a response to some external stimulus. The stimuli which awaken energy are other forms of energy beating on the transformer. When they cease to beat torpor ensues, and an essential character of their activity is change.

This principle explains the lack of energy experienced in a still, close, equable atmosphere, and the contrasted vigour excited by the opposite conditions, by movement of the air, changes in temperature, and other atmospheric influences.

The organism does not want to be always stimulated; it needs rest, too, and when stimulation goes on too long or is carried too far it becomes exhausted. For rest the opposite conditions are required—shelter, warmth, quiet, absence of movement—the conditions that favour torpidity. The healthy life consists in a judicious blend or alternation of the two.

The Old General Post Office.

In answer to a question in the House of Commons last Monday, Mr. Wedgwood Benn said that the front of the old General Post Office could not unfortunately be used in the new building. The First Commissioner was very willing, however, to consider any suitable suggestion for its purchase and re-erection. Neither the Victoria and Albert Museum, the Royal Institute of British Architects, the King Edward Memorial Committee, nor the London County Council were in a position to accept it although it had been offered to them.

London University Site.

Mr. Wedgwood Benn, replying to another question, said that the Government was under no promise to find a new site for the London University, and it was not intended to use part of the Botanic Gardens for the purpose. The area of land taken from the enclosures and added to the public part of Regent's Park during the last twenty years was two and a half acres.

At the Baillie Gallery.

Those who have regard for architecture in association with our English landscape may find to their liking a small exhibition, open until 24th December, of drawings by Mr. F. L. Griggs, at the Baillie Gallery, Bruton Street, W. As a delineator of subjects in which architecture largely figures, in the form of old houses, castles, or churches, Mr. Griggs, not for the first time, gives proof of mastery in more than just technique; he shows himself at the same time a composer of high accomplishment. His painter-like interpretation of architecture brings out the pictorial quality lurking in an architectural subject, whilst his close

acquaintance with architecture enables him to give full value and force to its forms and detail without losing himself in its intricacies or missing the effect of mass and solidity proper to building-work. The exhibition throughout presents a high level of firm, fine, and solid work, well worth the attention of students and lovers of the old architecture we yet possess in this country.

WALTER MILLARD [A].

British School at Rome.

The annual meeting of subscribers to the British School at Rome (Faculty of Archaeology, History, and Letters) was held last Thursday at 22 Albermarle Street, the President of Magdalen College, Oxford, presiding. The annual report, which was the last of the British School at Rome as formerly constituted, and the first of the Faculty of Archaeology, History, and Letters under its new title, stated that "the work of transforming the elaborate pavilion in the Valle Giulia into the permanent home of the School, with library, studios, and hostel, is already in progress. Until the new building is available, the Faculty of Archaeology, History, and Letters will necessarily receive, as hitherto, the students of the whole School, and for the present, therefore, no change will be made in its premises or work in Rome. The past season was in many ways the most successful in the history of the School. Never before has it had at one time so many students doing good work and remaining for an adequate period, and it is satisfactory to know that many of them will return during the coming season to continue the studies upon which they have been engaged. Much of this work will fall within the purview of other Faculties so soon as these can be got into working order." The Chairman, in moving the adoption of the report, said that the Faculty was now a part of a larger and wider institution. That was as it should be, because no one school could adequately deal with all that Rome represented. In Rome there was room enough for many helpers and lovers.—Mr. A. H. S. Yeames (formerly Assistant Director of the School) read a paper entitled "An Elizabethan in Italy." He described a journey made to Italy in 1563 by Sir Edward Unton, a country gentleman, based on a manuscript in the Soane Museum written by Richard Smith, one of the party.

A Rural Housing Experiment.

At the suggestion of the Local Government Board, the Billericay Rural District Council (Essex) have decided to amend their building by-laws to allow an Australian, Mr. J. Good, to build a house at Wickford on a new plan. It was stated that the house was a type of Australian dwelling adapted to this country's needs by a system of pile foundations, and that it would go far towards solving the problem of erecting cheap

workmen's houses in the district. Originally the Council had refused sanction, as the plan was contrary to their by-laws, but Mr. Good appealed direct to the Local Government Board.

OBITUARY.

The late E. B. l'Anson.

Edward Blakeway l'Anson, M.A. Cantab., who died on the 10th November at the age of sixty-nine years, had been a Fellow of the Institute since 1880. He was the elder son of the late Edward l'Anson, President of the Institute in 1886-87, in whose office he received his professional training. He was afterwards for a year in the office of the late Alfred Waterhouse, R.A.

Mr. l'Anson succeeded his father in a practice started by his grandfather over a hundred years ago and carried on ever since in the same building—an old-world mansion, 7A Laurence Pountney Hill, erected soon after the Great Fire of London. He was surveyor to St. Bartholomew's Hospital, and, in conjunction with Mr. Rowland Plumbé, carried out the rebuilding of the hospital, of which the late King laid the first stone in July 1904. Among other important buildings of his are the St. Mary Newington Baths and Wash-houses, won in competition, and carried out at a cost of over £40,000; almshouses at Charlton, Kent, for the Trustees of the Dutch Church, Austin Friars; the Corn Exchange, Mark Lane, E.C.; St. Luke's Church, Grayshott; the Clapham and the St. Mary Newington Public Libraries; the London and Commercial Sale Rooms in Mark and Mincing Lanes, and the General Steam Navigation Company's Offices, Trinity Square, in conjunction with Mr. E. Haslehurst; the Convalescent Home, Craig-y-don, Llandudno; Lord Alverstone's Cottage Hospital at Shanklin, I.W., &c. He was responsible for the laying out of new roads and streets and the building of houses for the South London and Streatham Estates, Limited, and the Drew and Mortimer Estates at Tooting and Streatham; in Camberwell, Wandsworth, Streatham High Road, Canterbury Grove, Norwood, and other parts of the south-western suburbs. He was also employed in several important cases of arbitration or assessment, comprising, by appointment of the Local Government Board, the London County Council's assessment of improvement charges for the southern approach to Tower Bridge, and the award out of the City consolidated rate to the Governors of Bethlehem and Bridewell Hospitals in the matter of the widening of Tudor Street, Blackfriars. He was a member of the Merchant Taylors' Company and filled the Master's Chair in 1901-2, was recently Warden of the Ironmongers' Company, and was a Liveryman of the Gold and Silver Wyre-Drawers' Company. He was a prominent member of the Surveyors' Institution and was Vice-President of

that body at the time of his death. He was also on the Council of the Architects' Benevolent Society, to the funds of which he had been a generous contributor.

Sir Alexander Stenning [F.], Past President of the Surveyors' Institution, writes: "I had known I'Anson for nearly forty years, and shall miss him very greatly, as many others will do; for his retiring and unassuming manners had won for him a host of friends. A man of the kindest, most unselfish, and most generous nature, he was ever ready to help those in need of assistance, and his advice, which was constantly sought, was always sound and to the point. Among members of his profession, too, he enjoyed the highest respect and esteem. He was a valued member of the Surveyors' Club, in which he followed his father, and was at the time of his death one of its oldest members. One feels that by his removal from us we have suffered an irreparable loss, and his memory will always be a cherished one."

John Thomas Bressey, who died at Wanstead, N.E., after a short illness, on the 21st August, in his sixty-ninth year, was elected a Fellow of the Institute in 1877 and had practised in the City at Ethelburga House, Bishopsgate, for nearly fifty years (latterly in partnership with his son, Mr. C. H. Bressey, F.S.I.). During a period of forty-five years he acted as surveyor to the Wanstead Local Board and its successor, the District Council, for which authorities he designed the Council Offices, Isolation Hospital, the sewerage system of the district, and other public works. He also held the appointment of architect to the Wanstead School Board during the whole term of that body's existence, carrying out a number of large elementary schools in Cann Hall Lane, Carey Road, Downsall Road, Trumpington Road, Cobbold Road, &c. The churches of Holy Trinity (Wanstead Slip), St. Gabriel (Walthamstow), and the Wesleyan Chapel (Wanstead) were of his design, as well as the spire of Christ Church, Wanstead. His firm was responsible for many domestic and commercial buildings in London and its suburbs, such as the Holborn Silk Mart, depôts for Messrs. Pickford & Co., factories at Bow and Poplar, and the development of several building estates. He was a Past Master of the Coopers' Company, and took a deep interest in the growth and welfare of the parish of Wanstead, in which nearly his whole life was spent.

John Samuel Paul, who died on the 9th October in his sixty-third year, was elected an Associate of the Institute in 1886. He was articled to Mr. Norman Shaw, R.A., and in 1870 entered the office of the late Sir Arthur Blomfield, A.R.A., afterwards becoming his head assistant. In 1900 he retired from the firm of Sir Arthur Blomfield & Sons, and entered into partnership with his son, Mr. John W. Paul, who was in practice as a Quantity Surveyor.

COMPETITIONS.

Harrogate School Competition.

The Competitions Committee of the Royal Institute of British Architects have been in correspondence with the promoters of the above Competition. As a result of the correspondence the conditions have been amended and are now regarded as satisfactory.

IAN MACALISTER, *Secretary*.

THE EXAMINATIONS.

The Final: Testimonies of Study.

Subject V. (b) DESIGN FOR A VILLAGE CHURCH.—The Board of Architectural Education have approved the designs in this subject submitted by H. W. Hallas, A. E. Lowes, G. E. Charlewood, and Wm. Voelkel, in addition to those mentioned in the last list [p. 61].

MINUTES. III.

At the Third General Meeting (Business) of the Session 1912-1913, held Monday 2nd December 1912, at 8 p.m.—Present: Mr. Ernest Newton, A.R.A., *Vice-President*, in the Chair; 19 Fellows (including 9 members of the Council), and 23 Associates (including 1 member of the Council)—the Minutes of the Meeting held 18th November 1912, having been published in the JOURNAL, were taken as read and signed as correct.

Mr. E. Guy Dawber, *Vice-President*, acting for the Hon. Secretary, having referred to the death of Mr. R. Norman Shaw, R.A., and paid tribute to his great gifts as an architect, it was resolved, upon the motion of Mr. Dawber, that the regrets of the Institute for the loss their art had suffered by the death of Mr. R. Norman Shaw, R.A., be entered on the Minutes of the Meeting, and that a message of sympathy and condolence be conveyed to his relatives on behalf of the Royal Institute of British Architects.

Mr. Dawber, having formally announced the receipt of a large number of works presented to the Library since the last Business Meeting, mentioned specially a donation of twenty-seven volumes made by Mr. Leonard Redmayne in fulfilment of the wishes of his father, the late Mr. Robert Tunstall Redmayne [F.], whereupon it was resolved that the cordial thanks of the Institute be voted to Mr. Redmayne for his generous gift, and also to the various other donors.

The following candidates were elected by show of hands under By-law 10:—

AS FELLOWS.

GRACE: Lionel Upperton [*Grissell prizeman* 1902, *Associate* 1905].
GREENE: William Howe [A. 1892] (Newfoundland).
HIND: Arthur Henry [A. 1890] (Leicester).
HONNOR: Timothy [A. 1898].
HORSBURGH: Victor Daniel [A. 1896, *Inst. Medalist (Essays)* 1907] (Canada).
JOASS: John James [*Pugin Student* 1892; *Owen Jones Student* 1895, *Associate* 1895].
KENDALL: Franklin Kaye [A. 1894] (Cape Town).
LISHMAN: Frank [A. 1894].
MUNBY: Alan Edward, M.A. Cantab. [1907].

REID: James Campbell [A. 1907] (Glasgow).
 REILLY: Charles Herbert, M.A.Cantab. [A. 1902] (Liverpool).

The following Licentiates who had passed the qualifying examination were also elected to the Fellowship:

CRICKMER: Courtenay Melville.
 ELCOCK: Charles Ernest (Colwyn Bay).
 HAYWOOD: William (Birmingham).
 LITTLE: Owen Cary.
 MARTIN: Arthur Campbell.
 MILNE: Oswald Partridge.
 TATCHELL: Sydney Joseph.
 WATSON: John (Glasgow).
 WILLEY: Frederick (Durham).

AS ASSOCIATES.

ALLEN: Albert George Westerman [S. 1907] (Leeds).
 ALLEN: Newstead Adams, P.A.S.I. [S. 1909] (Montreal).

AXTEN: Herbert Joseph [S. 1908].
 BARRY: Francis Renton, jun. [S. 1911].
 BAUSOR: Thomas Paul [S. 1908] (Wakefield).
 BENNETT: Thomas Penberthy [S. 1911].
 BESSANT: John Archibald [S. 1910].
 BHEDWAR: Sohrab Keikhoosr [S. 1910] (Bombay).
 BOOTH: Alfred [S. 1908] (Wakefield).
 BROWNLEE: Herbert John [Special].
 BRIDGMAN: Gordon Brock [Special] (Sudan).
 CHESTON: John Alford [S. 1910].
 CULLEN: David Shearer [Special].
 DALGLEISH: Kenneth [S. 1909].
 DUNN: Gerald Morton [S. 1904].
 EVANS: Charles Glynn [S. 1909] (Neath).
 GAUNT: Oliver [S. 1907].
 GILMOUR: Thomas Gilchrist [Special] (Glasgow).
 GOLDSTRAW: Harold [S. 1908] (Tunstall).
 GREEN: John William [S. 1907] (Sheffield).
 HARVEY: John Culy [S. 1908] (Northampton).
 HOLLAND: Percy Eastcourt [S. 1907].
 HONEYBURNE: Ernest Hardy [S. 1903] (Liverpool).
 HUGHES: Rowland John [S. 1906] (Llanfairfechan).
 KAY: John William [S. 1909] (Edinburgh).
 MAUGHAN: Joseph Robinson [S. 1908] (Newcastle-on-Tyne).
 MOIR: David James [S. 1909] (Montreal).
 MOORE: Frederick William [S. 1910] (Keighley).
 MUIR: Robert George [Special].
 OPENSHAW: Frederick Evelyn [Special] (Oxford).
 OWEN: Wilfrid Scotter [S. 1910].
 PAGE: John, B.A.Cantab. [S. 1908].
 PEARSE: Geoffrey Eastcott Pearse [S. 1909] (Johannesburg).
 PICKMERE: Travers [S. 1909].
 POPE: Thomas Campbell [S. 1907].
 PUTWAIN: William Stewart [S. 1907].
 ROBERTS: Robert George [S. 1904] (Sheffield).
 ROBINSON: John Charles [S. 1908].
 SCHOOLING: Stanley Philip [S. 1908].
 SCOTT: Eric Wilfrid Boning [S. 1910].
 SCOTT-MONCRIEFF: William Walter [Special].
 SOMERFORD: Thomas Retford [S. 1910].
 SPURR: Willie Rowland [S. 1905] (Wakefield).
 STOKOE: Ralph [S. 1908] (Newcastle-on-Tyne).
 SUTCLIFFE: Eric John [S. 1908] (Halifax).
 TALVALKER: Vasudeo Ramchandra [S. 1910] (Baroda).
 TOPHAM: Geoffrey Ronald Gilbertson [S. 1911].
 WEBB: Philip Edward [S. 1911].
 WARRY: John Lucas [S. 1906].
 WHINCOP: Walter George [S. 1908].
 WILLIAMS: Llewellyn Edwin [S. 1911].
 WORTHINGTON: John Hubert [S. 1910].

AS HON. CORRESPONDING MEMBER.

BERNIER: Stanislas Louis [Membre de l'Institut de France, Président de la Société Centrale des Architectes Français] (Paris).

The Secretary announced that by a resolution of the Council under By-law 22 the following gentlemen had ceased to be members of the Royal Institute: M. F. Cavanagh (Perth, W. Australia), H. Aspinall (Liverpool), H. G. Brace (London), J. T. Lee (London), C. C. Robin (London), of the class of Fellows; W. E. Johnson (London), E. G. Walker, R. W. Beddingfield (Leicester), A. Hale (Birmingham), H. G. Holt, J. N. Johnston (Yeovil), W. McCulloch (Alloa, N.B.), C. E. Power (London), F. R. Smith (Newport), and F. Wade (Newport), of the class of Associates.

Mr. G. A. T. Middleton [A.] in accordance with notice, asked the following questions:—

1. Whether it was true that while Testimonies of Study for the Intermediate Examination had to be submitted by 28th September, those candidates who were relegated were only informed by letter dated 8th November and posted so as to reach even London residents late on 9th November, when they were required to furnish alternative drawings by the morning of 15th November; and if so whether in the opinion of the Examiners this was reasonable.

2. Whether the Board of Architectural Education were aware that there are rumours of laxity in permitting candidates to leave the room temporarily during the progress of the examinations, and in allowing communications to pass between the candidates.

3. Whether, at the Final Examination, the fact that a candidate was young was of itself prejudicial to his chance of success.

The Chairman, replying as Chairman of the Board of Architectural Education, stated in reply to the first question that unsatisfactory drawings were returned at the earliest possible moment; that the return of such drawings was an act of grace on the part of the Board, of which candidates as a rule were able to avail themselves; but that if the matter were pressed too closely, the Board might find it necessary to discontinue this act of grace, and the candidate would lose his chance of making fresh drawings and sitting for the next examination.

The second question was answered in the negative, and the allegation of laxity in the conduct of the Examinations was emphatically denied by several moderators present.

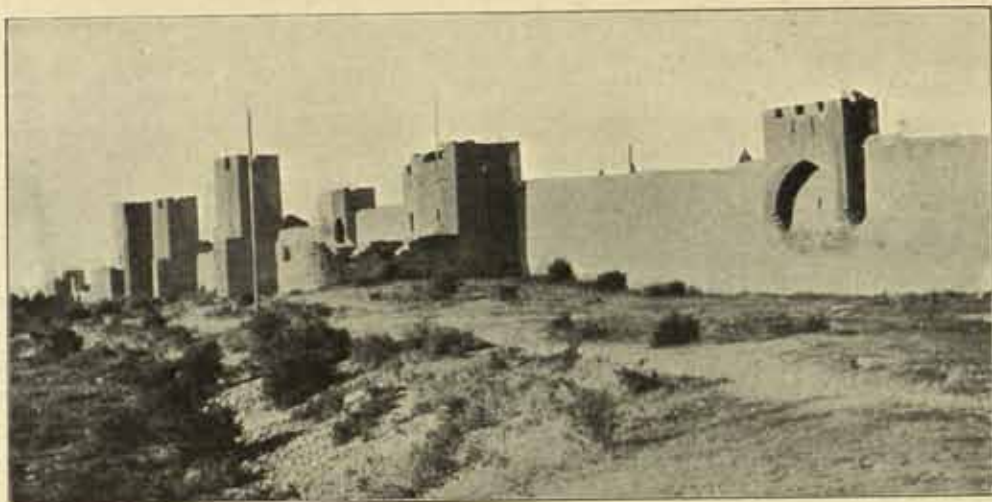
With regard to the third question, the Chairman stated that the Board had no knowledge of any case of the kind referred to; if any specific case occurred, the proper course was to bring the matter to the notice of the Board in order that a proper inquiry might be made.

Mr. Robert J. Angel [A.], in accordance with notice, brought forward the question of architects tendering for the preparation of designs, &c., of buildings, and in particular an instance of certain architects who submitted tenders to the Wigan Education Authority for designs &c. and quantities for the erection of a High School for Girls.

Mr. Angel further moved that the matter be referred to the Practice Standing Committee to consider and report upon (1) the practice of corporations or any other bodies or individuals inviting tenders from architects; and (2) the question of architects tendering in response to such invitations.

The motion having been seconded by Mr. G. Hastwell Grayson [F.] was put to the Meeting and carried.

The proceedings then closed, and the Meeting separated at 9 p.m.



THE WALLS OF VISBY.

By HORACE PORTER, M.A.Cantab. [A.].

Read before the Royal Institute of British Architects, Monday, 16th December 1912.

I HAVE tried to put together the substance of some notes made during two recent holiday visits to the wonderful city of Visby, in the island of Gotland. The visits were, unfortunately, too short for the notes to be as complete as I should like to have made them; but they may serve to suggest some points of interest and significance in connection with the ramparts which still surround the greater portion of the town. I have purposely limited my attention here to the *walls* of Visby, its churches having been fully described in the interesting papers and drawings by Messrs. White, Haig, and Carpenter, published in the R.I.B.A. TRANSACTIONS for 1886.

It may be worth noting, by the way, that since that date a great deal of new light has been shed upon two, at any rate, of the churches, in the course of a careful investigation at present proceeding under the direction of Dr. Ekhoff, who has recently published a book on the results of the excavations in the church of St. Clement,* where the foundations of no fewer than three former churches have been discovered within the walls of the ruined building of the thirteenth century. The foundations of an older church have also been laid bare inside the walls of St. Nicolaus, and the work now going on there is continually bringing to light fresh problems with regard to the history of the building.

The general result of these investigations, it is considered, will be to prove the existence of Christianity in the island at a far earlier date than that which ancient tradition assigned to its introduction, at the time of St. Olof's visit in 1030.

The island of Gotland is a low-lying plateau of limestone rock, some 70 miles long by 35 in breadth, in the middle of the Baltic Sea. The nearest land is Sweden, and with Sweden its history has been linked more or less closely from the ninth century. The island has been a part of the Swedish kingdom since 1645, and during the last two centuries the modern little town of Visby has come into being among the ruins of the past.

That is one of the distinctive features in Visby's history, reflected in its present-day aspect—the absolute break between the old life and the new. The little Swedish town of to-day.

* *Sct. Clement's Kyrka i Visby*, 12 kr.

with its quiet streets and shady gardens and small whitewashed houses, has no more connection with the magnificent merchant city of the past than has some pert little hermit crab with the great shell in which it is domiciled. Only a quarter of a century ago there were fields to be ploughed within the circuit of the city wall, and although the shell is less empty now, as the Swedish Visby increases year by year, yet still the gaunt grey ruins dominate it like skeletons of a greatness that is dead.

Of the thirteen or more churches which formerly stood within the city walls, one (the cathedral church of St. Mary) is still in use, and the ruins of nine others are ranged close together in the centre of the town, while along the ramparts thirty-eight towers and bartizans have survived out of the original tale of over fifty. Very striking is the impression which these towers produce as you approach the town. It is the Queen City of the Baltic that confronts you, the Visby of the thirteenth century, during which those ramparts grew up together with the fame that rose so rapidly and died down again so soon.

This is the aspect of the Visby walls with which I propose to deal: the witness which they bear to the successive stages of the city's rise and fall. For here we touch, I think, the secret of their special interest, and of their individuality. Some of their most striking features are due to the fact that they were not raised, in the beginning, as military fortifications round a military stronghold, but were designed first to assert, and later to safeguard, the power of a merchant city. In the details of their construction and masonry they afford a remarkable instance of history written in stone.

In order to make that history clear I must ask to be allowed to begin by going back a little further into the past.

The fame of Gotland has become eclipsed by that of its one city, yet the island was an important centre of commerce long before the name of Visby had been heard. The island folk were among the first to find out the seaways of the Baltic, and to establish trade routes along the Gulf of Finland. Nor did they stop there, but extended their enterprises over the North Sea. The extraordinary number and variety of coins dug up in Gotland bears witness to the extent and antiquity of its commerce with other lands. No fewer than 20,000 Anglo-Saxon coins alone have been found, most of them of the time of Ethelred. Scandinavian, Russian, and German coins are plentiful, and there are also some from Southern Europe and from Arabia. Dr. Klintberg's book* on the early history of the island supplies interesting details of these and other evidences of civilisation and wealth.

By the end of the tenth century Gotland had come to be the chief mart for all the important trade of Northern Europe with Russia, in the first place, and through Russia with the East. This trade included all that was most costly of Russian furs and Eastern gold and gems, so that it was natural that the foreign merchants who flocked to the island should come to desire some special protection for their wares. It was natural, too, that they should congregate in the spot which afforded the best anchorage for their ships. This they found on the west coast, under the shelter of the most famous "Vi," or place of sacrifice, of Gotland's heathen days, a rock platform close to the shore and raised some hundred feet above it.

At the foot of this little height a natural harbour was formed in the shelter of two small islands close to the shore (now joined to the mainland), and here the Gotlanders had been accustomed to moor their vessels, and had formed a "by," or community, long before they were joined by foreign traders. It was only by degrees that these established themselves in growing numbers, and developed the little "Vis-by" into a centre of commerce and a place of storage for their costly goods. No precise date can be given for this development; but it must have

* *Anteckningar om Gotland*, M. Klintberg, 5 kr.

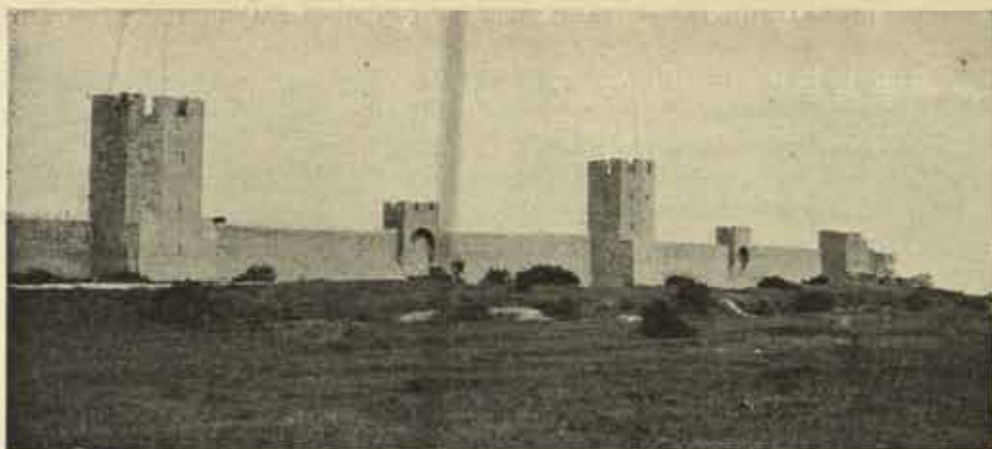


Fig. 1.—EAST WALL (TOWERS 9, 10, 11).



Fig. 2.—MYNT-HUS (St. Nicolaus seen behind).

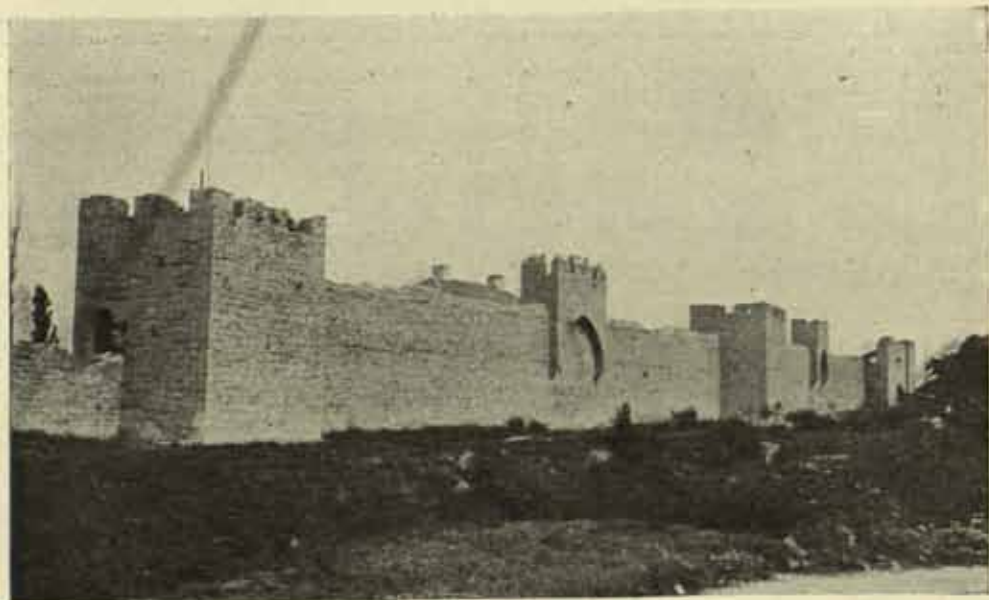


Fig. 3.—SOUTH WALL.

been fairly complete in the twelfth century, when the Visby merchants had special privileges granted them by the Emperor Lothair, and organised the first beginnings of the great Hanseatic League, in which Visby was for a while the leading city.

In the thirteenth century this "Venice of the North" reached the zenith of its wealth and power. Pilgrims as well as traders flocked thither on their way between Scandinavia and the Holy Land. Religious communities came to stay, and built their own churches. Visby had its own mint, its own Government, and its own code of sea law, which commanded obedience from the ports of Russia to the Mediterranean, and forms much of the basis of modern maritime law.

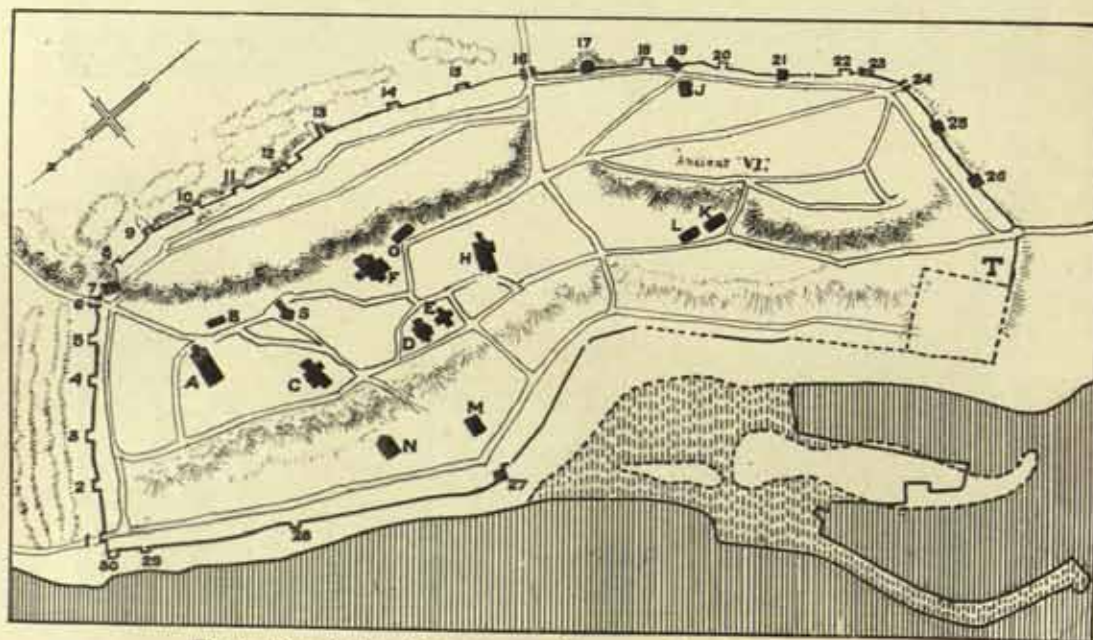


Fig. 4.—SITE MAP OF VISBY, SHOWING WALLS AND MAIN THOROUGHFARES.

N.B.—None of the buildings in the city are indicated except the churches of the twelfth and thirteenth centuries. The dotted lines show where the wall has disappeared, and also indicate the old line of the shore, and of the two islands. The present quay is shown surrounding these.

- | | | | | |
|------------------|-----------------|---------------|--------------------|----------------|
| A. St. Nicolaus. | E. St. Lars. | I. St. Hans. | M. Russian Church. | P. Mynt Hus. |
| B. St. Gertrude. | F. St. Mary. | J. St. Per. | N. Holy Spirit. | Q. Tjarkhof. |
| C. St. Clement. | G. St. Karin. | K. St. Jacob. | O. Visborg Castle. | R. Kejsar Hus. |
| D. St. Drotten. | H. St. Michael. | L. St. Olof. | | |

* Has disappeared.

To the thirteenth century also belongs the history of the Visby ramparts, which I divide, for convenience, into three periods, coinciding more or less with the beginning, the middle, and the end of the century.

I. FIRST PERIOD.

I have said that the city of Visby grew up round about the raised "Vi," or place of sacrifice, above the harbour. This spot forms the southern extremity of a ridge of rock running parallel with the shore, and descending steeply on this side, like a miniature cliff, or "klint" (by which name it is known in the town to-day). From the base of this rock the ground slopes at first very gently, and then more steeply, to the shore, forming a series of terraces on which to build the town, which spread northward as it grew.

Along the main central terrace were ranged most of the churches, of which three, at any rate—St. Olof, St. Drotten, and St. Lars—were in existence before the beginning of the thirteenth century. Of these St. Lars affords a striking example of early twelfth century

Romanesque architecture. Some authorities place in the twelfth century also the remarkable "Helgeandskirke" (Church of the Holy Spirit), with its two-storied octagonal nave; but the early part of the thirteenth century is the date commonly assigned to this building.

By the end of the twelfth century it is evident that Visby had already reached a high degree of prosperity. Unfortunately, that prosperity meant loss to the rest of Gotland, where no separate township had formerly been recognised. The island as a whole had been the unit of social life, and free trade had been practised in its fullest form, native and foreign merchants alike living and trading where they chose. But only those Gotlanders who were established at Visby were allowed to share in its life and privileges. The rest found their goods taxed and themselves shut out from its markets, as much by its exclusive laws as by the wall with which, at the beginning of the thirteenth century, the town was enclosed.



Fig. 5.—Tårnhus.

Only a wall of moderate height was built at first, varying from 15 to 18 feet. The masonry was squared, uncoursed rubble of local limestone, the lower part being built with very large stones. It was finished at the top with wide battlements, alternately plain and pierced with a loophole. For a short distance at the north-east corner the later work has been cleared away, so that the wall stands out in its original line [figs. 2 and 12]. But it is easy to follow this throughout, as the battlements show distinctly in contrast with the later masonry—generally of smaller stones—with which they were filled up at the subsequent raising of the wall.

The line of this enclosing wall seems to have been determined by the ridge of rock whereof the famous "Vi" formed the southern extremity. It is built along the edge of this ridge, on the landward side, and down the slope to the sea at the north and south ends of the town. Along the sea-front it followed what seems to have been the old line of the shore for a distance which I find given as 1,950 yards. The three landward sides are estimated at 2,400 yards, making a total circuit of 4,350 yards. A considerable portion of the south and west walls has disappeared, but the rest of the line remains standing, with only a few breaches.

Three buildings, at any rate, along the ramparts seem to have been in existence before

the wall was marked out. These are indicated in black on the site map: the square, solid fortress (No. 27) now known as the "Krut Torn," or Powder Tower, down by the sea; the so-called "Mint House" on the slope at the north-east corner; and a remarkable building (No. 19) between the east and south gates, evidently deserving of a worthier title than the "Tjærhof," or Tar-factory, by which it is now distinguished.

This last is a long and now rather low building, with an almost flat roof of large slabs of limestone, which may very well have been put on, in its later days of tar manufacture, at the first-floor level of the original structure (there are indications of this having been carried up to a greater height). The doorway on the outer face of the building is blocked up, and so are the windows, which are of extremely simple construction [fig. 5].

I should conjecture that we have here one of the oldest buildings which still exist at Visby. Certainly it must have been already standing when the first wall was planned, for this butts against it with straight joint on either side. Also, it cuts obliquely through the line of

the wall, instead of projecting at right angles, as do all the other buildings along the ramparts, with the exception of the "Mynt-hus" [fig. 2].

It is a matter of history that Visby had its own mint by the thirteenth century, and although there seems nothing but tradition to connect it with this building, there are the remains here of a fine vaulted hall, with a story of fair height above it. That it was built earlier than the city wall is evident from the oblique angles which it makes with this, and from the line of junction between the two. The first battlemented rampart was built with a straight joint



Fig. 6.—KEJSAR HUS.

against the Mint House, and has come away from it, leaving a wide crack. Above the line of the battlements, the later masonry, added when the walls were raised, butts more closely against the older structure.

Certain other buildings—six in number—I take to have been erected together with that first city wall, and the first point to notice about them is that they are all ranged about the south-east end of the rock ridge, which formed the first focus of the town. There is the south gateway tower, giving on to the main road into the country, and two square towers just beyond this, where the wall turns westward: all simple structures of only a moderate height [fig. 3]. I measured the tower next to the south gate (No. 25), and found its dimensions as follows: projection 15 feet 3 inches, face 30 feet 6 inches, height about 43 feet.

Northward of the south gate, between it and the Tjærhof, are two more buildings which seem to have been erected together with the wall. One of these (No. 22) is so much defaced with later work that I could not make much of it; the other, the "Kejsar Hus" [fig. 6], is a striking example of a thirteenth-century house—possibly a storehouse and hall of exchange for the German merchants, who are described in thirteenth-century charters as "Emperor's men." It was used as a State prison in the eighteenth century, and the line of junction with the inner

face of the rampart is covered with cement and plaster; but on the outside there are clear indications of the house being bonded into the wall, which cuts at right angles through its centre.

A short distance beyond the Tjärhof again stands a semicircular tower (No. 17, described in one old map as "*Turris Kickath*"), which I think was also built with the wall [fig. 7]. It is based on a little promontory of rock, which may possibly have determined both its position and form. It is the only one built with a rounded face, and the masonry is of a bold and simple character. It has been walled up on the inside, and converted into a storehouse, with a gable hood for a roof, which looks extremely incongruous at close quarters, but forms an effective feature in the line of ramparts at a distance.

At the completion of this first period, then, we have the old merchant settlement developed into an independent and alien city, enclosed by a low wall, into which perhaps nine towers and other structures were either built or incorporated, chiefly round about the south-east plateau, which I take to have been the original heart and centre of the town.



Fig. 7.—TOWER 17.

II. SECOND PERIOD.

To the Gotlanders outside the pale of Visby the enclosing of the town was a bitter affront, and one which they were not slow to resent. In the year 1288 their hostility was organised into open warfare, and long before that date the rich burghers must have realised the possibility of an attack upon their usurping city. Accordingly, they set to work to fortify the most important positions along the wall at no very long time, probably, after its completion. I call this the second period in the history of the ramparts, and should place it, roughly, at about the middle of the thirteenth century, a time of great building activity within the city. Some fine work in the way of church building belongs to this period, notably the greater part of the beautiful Abbey Church of St. Karin.

I called attention to the fact that the towers which seem to have been erected together with the wall stand round about the important south-east rock plateau, and it is interesting to note that the six which, from details in their construction, I should place in the second period are ranged along the remaining section of the east wall. A glance at the map will show that this would be the part upon which attention would next be concentrated for defence against an inland foe; and the two towers which give the impression of being the earliest built along this stretch occupy the two most commanding positions, at angles in the wall, at either end of a slightly projecting platform of rock.

The importance of these towers (Nos. 9 and 13) is further emphasised by the bastions built on to the face of No. 9, and along the north side of No. 13, apparently for the purpose of enfilading the ditch in between [fig. 8 and headpiece]. They are pierced with loopholes, and are somewhat roughly built up to the height of the rectangular bases of the towers, which are the only two thus fortified.

The towers themselves are constructed on the plan adopted with the majority of those added later, as projections outside the rampart. They are open towards the town, and present, on the outside, a rectangular base up to the lower level of the battlements, or about 13 feet



Fig. 8.—Tower 13.

above the ground. Above that level the walls are carried up as five sides of an octagon, the change in form being effected by cutting off the external angles with what I may perhaps term *broaches*, sloping sharply back against the diagonal faces. Each face is pierced with narrow embrasures, one above another, and access to the different levels, on the inside, was evidently obtained by means of wooden floors and ladders, the sockets for which can still be seen.

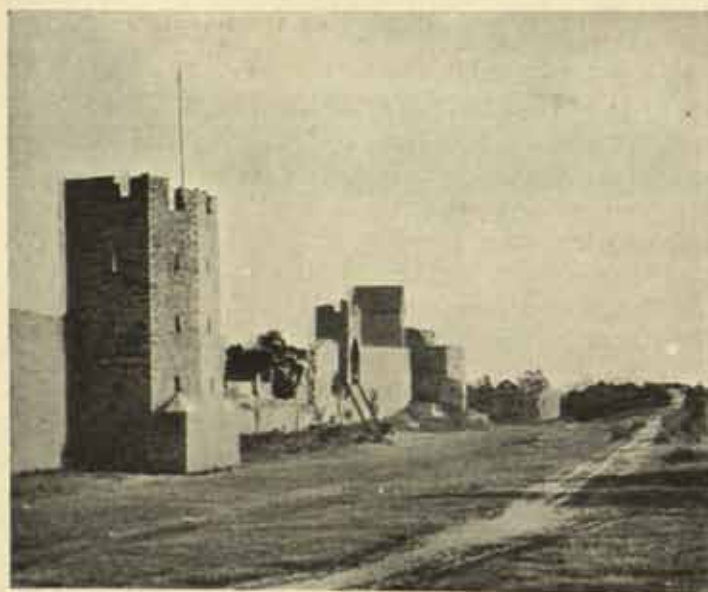


Fig. 9.—Tower 14.

This type of structure is repeated in thirteen of the towers still standing, with no essential differences, but with certain variations of detail which help to suggest the order of their erection. The rectangular base in the later towers is carried up above the level of the battlements to the height of the raised rampart—i.e. about 30 feet—and the ground-plan in these is larger than in Nos. 9 and 13. I should conjecture that

these towers had not been so tall as those built later, but they are too much broken down to afford any certain evidence upon this point. It is, indeed, one of the many puzzles which the Visby walls afford to try and find a reason for the almost entire disappearance of the upper portion of these two towers.

The towers marked 14 and 15 were, I think, next added, to protect the more level stretch of ground towards the east gate [fig. 9]. They are in far more perfect condition than the other two, but they also present the characteristics of low bases and wide-jointed masonry, with larger-faced stones and less mortar than in the later work. In No. 15 the line of junction between the tower and the wall, on the south side, shows with special clearness the order of the different stages of rampart building. The wall at this point is based on the rock ridge, at the very edge of this, and the tower was built over the face of the rock and against the wall, up to the foot of the battlements, and bonded in with the masonry filling up the space to the top of these; while above this level the raised part of the wall is butted against the side of the tower.

The angles between the towers and the rampart afford an interesting field for study all round the circuit. Some of the most useful pieces of evidence as to the gradual development of the fortifications can be gleaned from these.

The growing anxiety for the safety of the town also found expression in the building of gateway towers over the east and north entrances. The latter presents some interesting features. It is built against the inner and outer faces of the city wall, round an archway similar to the existing "Fishermen's Gate" beside the Krut Torn, and that it was not part of the original plan is shown by its line of intersection with the wall, which turns from east to south just beyond the entrance. The tower is built right into the corner, on the inside, standing square with the north wall, so that its exterior projection meets this at a distance of about 2 feet from the angle on the outside. This north-east corner of the wall, therefore, is seen up to the height of the old battlements, above which the later masonry shows no angle, but is carried on in the same line and butted against the tower with a straight joint [fig. 13].

III. THIRD PERIOD.

We come now to the third, and in some respects the most interesting, stage of the rampart building, comprising an immense amount of work done within a comparatively short space of time. Popular tradition places it in the last decade of the thirteenth century, after the open attack upon the town in 1288.

The attack was not successful. The peasant force was met by the better-armed burghers at some distance from Visby, and was routed with heavy loss. But the Gotlanders were as courageous as well as a fiercely angry people, and they would have gone on fighting had not the priests persuaded them into a truce, which they made use of to lay their grievances before the Swedish King Magnus Ladislas.

Gotland had for some centuries been drawn into special relationship with Sweden by a treaty which bound the Swedish kings to protect the island in time of need, and entitled them,

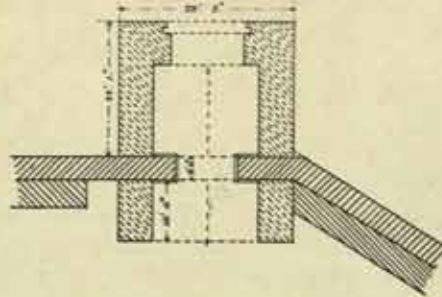


Fig. 10.—GROUND PLAN OF NORTH GATE.
Scale $\frac{1}{4}$ inch to 1 foot.



Fig. 11.—NORTH GATE.

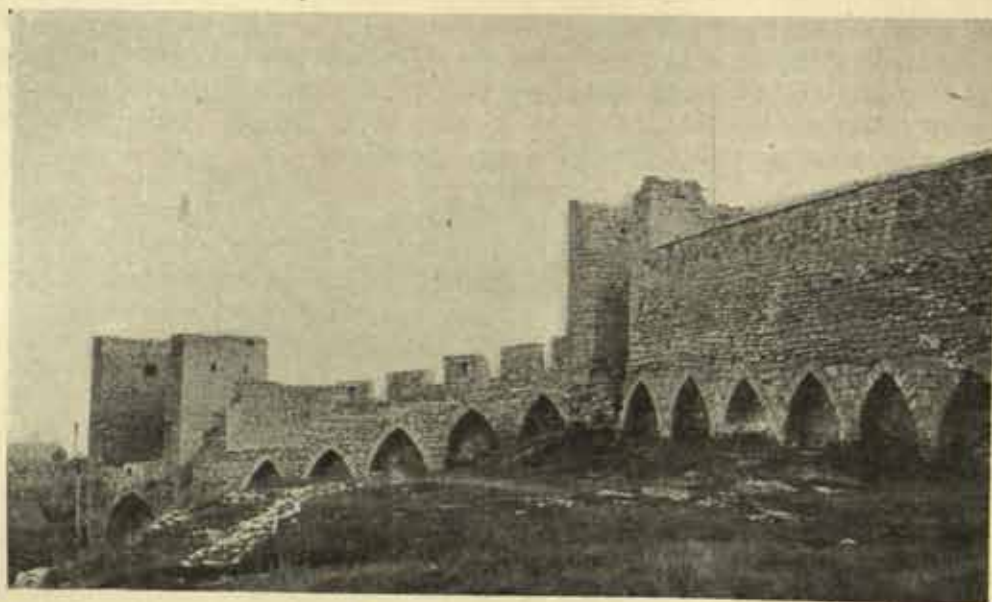


Fig. 12.—INSIDE NORTH GATE

in return, to levy a general tax upon its people. The terms of this treaty, apparently, the men of Visby had violated in fortifying their city without their patron's leave, an offence that King Magnus was as ready as the islanders could wish to resent and punish. He promptly called upon the merchant fraternity to double their yearly levy, besides paying a heavy fine for the offence of having built and fortified their wall, and for the privilege of further strengthening it in the future.

This privilege, according to the commonly received tradition, they proceeded to exercise

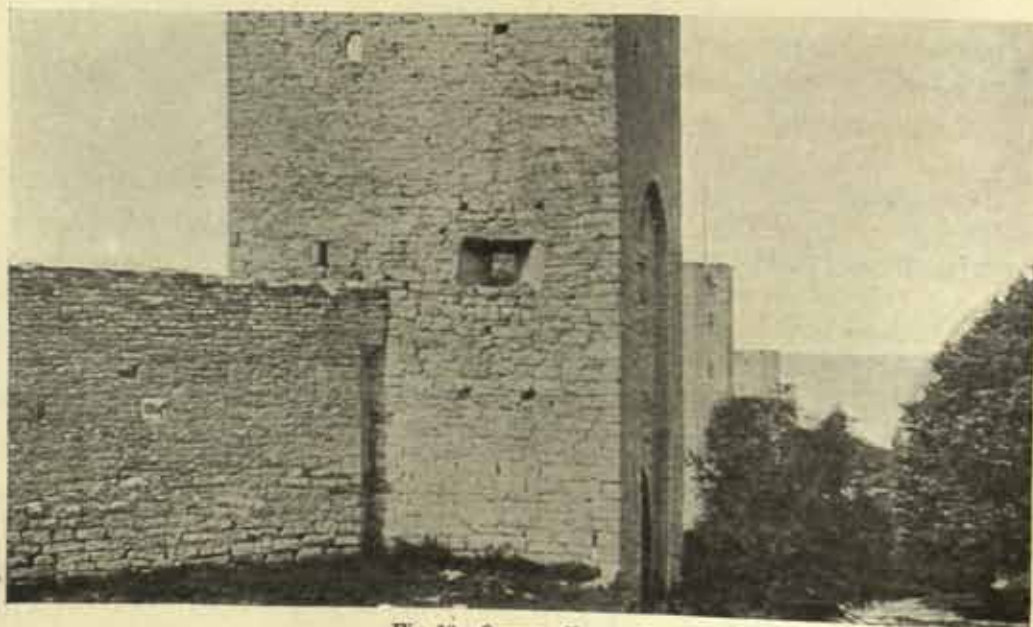


Fig. 13.—OUTSIDE NORTH GATE.

at once by raising the city wall and more than trebling the number of towers along it, in the course of the following decade. Dr. Hildebrand, however, the eminent antiquarian, seems to be of opinion that all this work was completed *before* the fighting of 1288. The point is not material from an architectural point of view, as it only makes a difference of ten years or so in the date of this third period. In any case, we may place this in the last quarter of the century, when the power and fame of the city were at their height and the name of Visby had become a byword for wealth and splendour. The legends of those days speak glibly of silver roofs to the towers, and copper window-frames in the tall merchant houses, and golden cradles for the children, and gems to adorn the walls of the churches. The brick roses at the west end of St. Nicolaus are said to have gleamed red with great carbuncles which glowed as a beacon to ships at sea. And if some of these glories read rather like a fairy-tale, it is certain that the Visby of the latter part of the thirteenth century was a city of possibly unparalleled magnificence.

The work done to the ramparts during this third period comprised the raising of the city wall and the addition of forty or more new towers of various types. They are all open on the inside, with the one exception of the north-west corner tower, popularly known as "Cames" (No. 30). The two small towers between this and the "Krut Torn" (No. 28, and No. 29, known as the "Jungfru Torn") are also practically enclosed. They are built as battlemented buttresses against the outer face of the wall, which apparently was not raised along this seaward side. It is only about 15 feet high here, on the inside, with wide battlements.

Two more square gateway towers were built, No. 12 (enclosed to form a storehouse, in the eighteenth century) and No. 1, at the north-west corner [fig. 14]. A number of rampart towers were also added on the plan already described, with rectangular base and five-sided upper part. Four of these were built along the north wall, and six along the east wall. Whether there were any on the western section of the south wall it is impossible to say, this part having entirely disappeared.

I have already touched upon the slight differences distinguishing these towers from the four earlier ones of the same type along the east wall. Those on the north side are the tallest, and probably the latest built. Their greatest height is about 70 feet. They are not



Fig. 14.—INSIDE THE N.W. GATEWAY TOWER.

absolutely uniform in their dimensions, but on ground-plan they measure, roughly speaking, from 20 to 30 feet in projection and from 24 to 28 feet across the face.



Fig. 15.—EAST WALL.

eight now remain, the rest having fallen down—in most cases bringing the wall with them—owing to their unusual method of construction [figs. 15 and 16].



Fig. 16.—EAST WALL.

One of them (No. 4) has an arched entrance through its rectangular base, but this looks rather like an afterthought. There is no sign of an inner archway, as in the other gateway towers, and the place of a portcullis arch on the outside is supplied by grooves on either side of the doorway, where the wall has been refaced up to the height of the broaches, to provide a sufficient protection for the purpose.

The most remarkable feature of this later work is the type of balcony tower, or bartizan, evolved in the raising of the ramparts. These "saddle" or "hanging" towers, as they are termed locally, are, so far as I know, peculiar to Visby. They were added as further defences midway between the taller towers (i.e. from 120 to 140 feet distant from these, on either side), and must originally have been about twenty in number. But only

This is aptly described by their popular name of Saddle-towers, their side walls being perched across and astride of the raised rampart for some six feet above the summit of this. They are carried about half-way down the wall on either side, and rest upon large stone corbels. Like the other towers, these "saddles" are open at the back, and the battlemented face is supported by a wide arch built against the rampart wall. The effect is extremely picturesque, but the strain on the wall seems to have been excessive. So far as I can judge, all those that have come down have fallen outside the wall, and their tendency to do this is shown by the fact that two of the remaining eight are buttressed up from the outside.

As I have said, the arch on the outer face springs from corbels, but it apparently was not bonded into the rampart wall. A portion of this has been left standing in one instance, showing the corbels, and also a fair face against which the arch had rested.

The one remaining tower of this type along the north wall was probably one of the latest

built, and some care seems to have been taken to adjust the balance by increasing the projection of the side walls at the back and by making canted corners on the front. But even here a strong buttress has been built beneath the arch to prevent it from sharing the fate of the three others formerly along this side. Two of them fell in 1842 and 1866 respectively, making great breaches in the wall.

This later saddle-tower is more elaborate in construction than the others, but I do not think it is so picturesque. The simplicity of outline forms one of the most striking features of these bartizans. Another characteristic point to note is the absence of uniformity in the height, span, and form of their supporting arches. Most of them are pointed, but they are rounded in one or two of the smaller "saddles" on the east wall. The span of these is barely 20 feet, while those on the south wall measure 25 feet.

These variations give rise to some interesting questions of construction, and I believe the explanation is to be found in a feature of the original city wall which was almost entirely

obliterated by the work of raising and thickening done at this third period. That work included a strong buttress of fairly rough masonry built against the inner face of the wall, round the three landward sides, and supported upon a row of low pointed arches springing from the ground. These arches form another striking—and, I believe, unique—feature of the Visby ramparts, and in the references

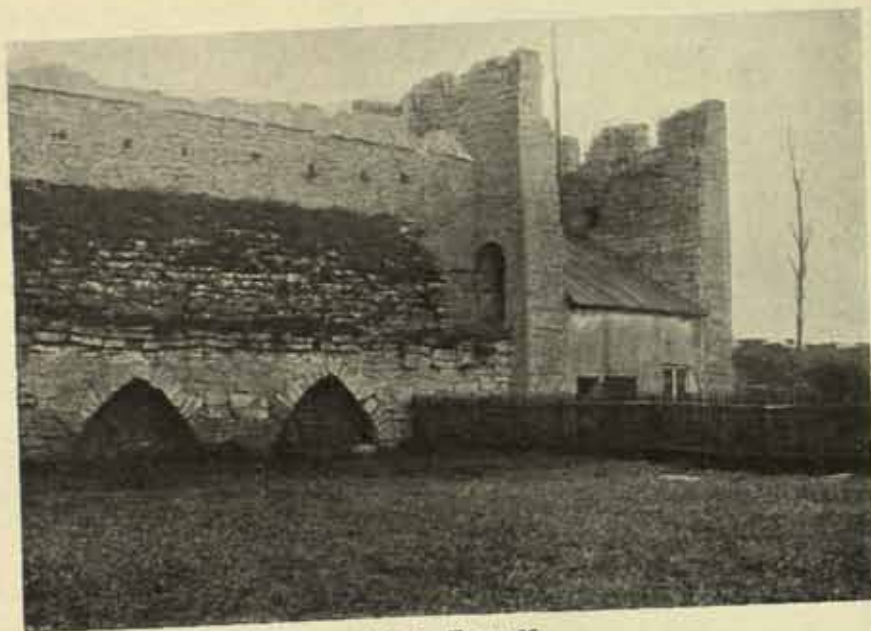


Fig. 17.—Tower 26.

to them that I have come across in the guide-books of the place it seems taken for granted that they belong to this third period, and that the buttress was arcaded in this unusual fashion either to economise materials, or possibly to provide space for storage.

The general effect in most parts—and specially inside the north wall—certainly suggests the impression of the arches being simply a part of the buttress, but various details, taken together, point to an earlier origin. I believe that the first city wall was provided on the inside—for a great part of its length at any rate—with a projecting ledge or platform from 2 to 3 feet in width, supported upon a line of arches built against the wall up to a convenient height for looking out between the battlements. On the slope above the Mint House, where the later work has recently been cleared away, just such a ledge has been exposed [fig. 12], and it would have been a feature of obvious utility in so large a circuit of wall with so few towers as were in the original scheme. Outside some of the oldest towers the buttress stops a few feet short, leaving a small platform open immediately above the arches, and below a doorway in the side wall, which projects, in these earlier towers, inside the rampart [fig. 17]. Also, here and there



Fig. 18.—TOWER 9.

along the inner face of the south and east walls a line of flat stones can be distinctly traced immediately above the arches. It seems clear that these were in existence before the raising of the rampart, and that the ledge above them was utilised as a base for the later buttress work and for the side walls of the saddle-towers.

The corbels supporting the front arches of the "saddles" are built in with the later masonry between the old battlements, and rest upon the lower level of these. So that this striking form of tower seems to have been suggested by the main features in the wall to be raised, and would necessarily be subject to certain variations corresponding with the breadth and height of the battlements, which are not uniform throughout.

The line of inner arches was interrupted by the earliest towers, but the later ones were built against the outside of the rampart up to this height, and then carried up, with faced masonry, flush with the interior face of the wall. The towers stand open now down to the ground, but the broken masonry at their inner angles affords undoubted evidence of the

arches having been originally carried across [figs. 18 and 19].

The great height of the north wall (nearly 30 feet in some parts, or from 4 to 6 feet higher than the east wall) would require a thicker buttress, and I venture to suggest that here it may have been found needful to case over the original arches, so as to obtain a broader base than the narrow platform would afford. At the corner of one of the towers (No. 3) the broken masonry

affords suggestive evidence that this was done [fig. 20].

The place of the blocked-up gangway was supplied throughout by two wooden galleries, one at about the old level, and one near the top of the wall. The two lines of socket-holes for cross-beams, or putlogs, can be clearly followed.

There is no doubt that this line of ground arches greatly adds to the pic-

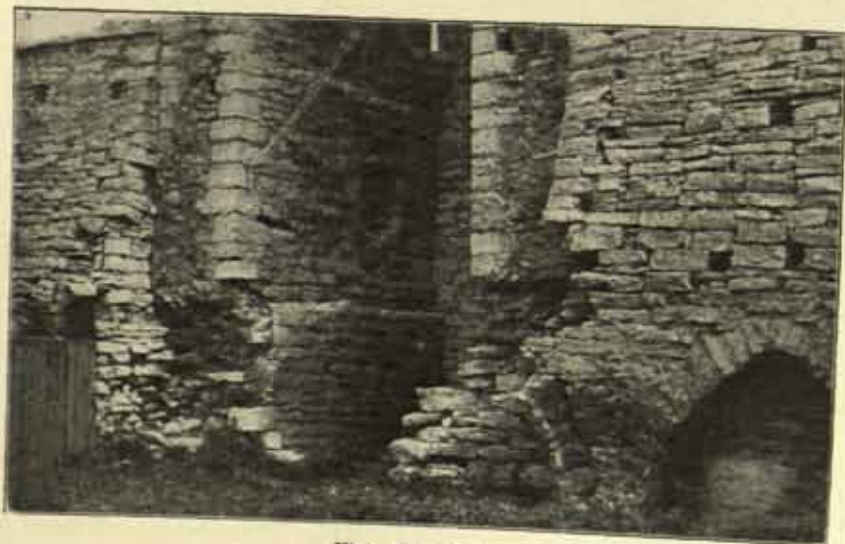


Fig. 19.—TOWER 11.

turesqueness of the inner face of the ramparts. The effect is particularly striking along the north wall, where a delightful shady walk runs down the slope towards the shore, its name of "Silfverhättan" commemorating the silvery roofs of the towers in their palmy days. Another attractive rampart walk is the "Murgatan" (Wall-street), just beyond the east gate, where, until the last few years, there still stood the wooden posts and beams of a rope-walk dating back to the Middle Ages.

IV. VISBY'S FALL.

The beginning of the fourteenth century found Visby at the zenith of its wealth and fame: the Queen City of the Baltic, guarded by its formidable circuit of rampart walls and towers. In appearance these would seem to defy all comers, and it is one of the ironies of Visby's history that they proved so useless when the robber King Valdemar of Denmark made his raid upon the treasure city in the year 1361.

The Swedish King Eric wrote twice to the Visby burghers, warning them of Valdemar's purpose, and urging them to be prepared; but they seem to have reckoned themselves safe behind their splendid ramparts, and all active efforts to repel the invading army were left to the despised country folk. The Gotlanders had not lost their courage, and they mustered in force to meet King Valdemar when he landed on the island at some distance from Visby. They were utterly routed, but made another gallant attempt to stop his progress a little further on. Again they were defeated, but once more they gathered themselves together for a final stand on the broad plain overlooked by Visby's southern wall. The burghers must have looked down from their watch-towers upon the fearful slaughter which ensued, and possibly it broke their courage. At any rate they made no attempt at holding the walls so elaborately prepared to stand a siege, but opened the south gate to admit the conqueror. And there seems a certain grim appropriateness in King Valdemar's answering insult, which was to have a breach deliberately made in the wall for his entry, in token that he came by force of arms.



Fig. 20.—TOWER 3 (S.E. ANGLE)

Local tradition points to the broken wall near the Tjærhof as the "Danish breach"; but it is tempting to suggest that this may have been made close to the south gate, on the eastward side. The original wall here has been obviously broken and rebuilt to the height of the raised wall, all at one period, with large square blocks of stone and very little mortar. This later work is carried up from the base of the wall to its summit without a break, and the line of junction with the old masonry beside the south gate is plainly visible. Also there is no trace of a saddle-tower on this stretch of wall, which is butted up against the curious old building (No. 23) at its eastern extremity, and is finished along the top with short, thick battlements, to be found nowhere else in the whole circuit of the ramparts. There is, of course, no conclusive evidence as to the date of this work, but it is at least possible that the men of Visby did not suffer the breach to be left open for the benefit of future enemies, and that this rebuilt portion is fourteenth-century work put in to reinstate their defences and to cover up the traces of that time of humiliation and loss. That they were anxious to forget the part they had played is shown

by the legend which gave its name to the "Jungfru Torn," wherein was said to be walled up a maiden who had betrayed the town into Valdemar's hands.

The robber king's sack of the town seems to have been as thorough as he could make it. Gold and silver from the merchants, and jewels from the churches (including the famous carbuncles from S. Nicolaus) were gathered together by his men in barrels-full, so the story goes; and when he took his departure, at the end of a month, he claimed the whole of Gotland as his own possession.

There was no lasting peace or prosperity after that for the merchant city. Denmark and Sweden fought repeatedly over so rich a prize, and their kings looked upon it as a mine of wealth to be drawn upon at need. Nor were matters improved even when the two kingdoms came to be united under a single sovereign. For one of these—Eric of Pomerania—in 1411 built the Castle of Visborg, in the south-west corner of the town, and made it into a pirate stronghold from which to capture the merchant vessels bound for Visby's harbour. The traces of this fifteenth-century work are now to be seen only in the few remaining fragments of the castle, and in the absence of walls along the southern slope down to the sea, these having been pulled down to make room for the castle precincts.

All through the fifteenth century Visby was gradually losing its position in the world of commerce. Fresh trade routes were being opened up, and Gotland was no longer the centre that it once had been. From being the leading city in the Hanseatic League it descended to being first only in one of three groups, and this distinction in turn was challenged by its rivals. The rising town of Lübeck, in particular, was resolute in its persistent attacks upon Visby's pre-eminence, and gained justification when the lords of Visborg Castle began to plunder Lübeck vessels. This was what the Danish Admiral Norrby did when he was put in command of the castle at the beginning of the sixteenth century. He made it his boast that he plundered only the richest ships, and with this view he singled out those of the Lübeck merchants for many a daring chase and capture. The Lübeckers carried their grievances indignantly to the Swedish king, whom they urged to undertake an expedition against Visby; but it seems to have miscarried, so they took the law into their own hands and boldly attacked the city that had once been the glory of their merchant league. They landed to the north of the town, and broke through the walls near the north-west gate, plundering, burning, and destroying houses and churches, and laying siege to the hated castle. This time Visby had no power to rally, and when peace settled down once more it was the peace of extinction. The Lübeckers' breach was never repaired, and a great gap in the wall shows where they made their entry. Churches and houses were left to fall into decay; the monks left their abbeys, the rich merchant vessels vanished from Gotland's shores, and when the island came finally under Swedish rule, after the Peace of Brömsebro, in 1645, the once famous city had dwindled into a handful of humble dwellings sheltered among the ruins of the past. Visborg Castle was destroyed, and the stones were used by one of the Swedish kings to make lime for his new palace; but the ramparts, and most of the churches, were left alone for rack and ruin to do their worst until recent times, when very intelligent care has been given to their preservation.

There are moments, when the sun shines brightly upon that splendid line of ramparts, when you can fancy that they still screen the wonderful merchant city, and can read in wall and turret the glories of the past. But there are moments also when the desolation of the present is all that speaks from those grey, gaunt towers, as the twilight deepens, and the wind, whistling drearily through cracks and crannies, seems to echo the old Hebrew prophet's lament:

"They shall make a spoil of thy riches, and make a prey of thy merchandise: and they shall break down thy walls, and destroy thy pleasant houses: and they shall lay thy stones and thy timber and thy dust in the midst of the water. . . . How art thou destroyed, that wast inhabited of seafaring men, the renowned city, which wast strong in the sea, she and her inhabitants, which cause their terror to be on all that haunt it!"

DISCUSSION OF MR. PORTER'S PAPER.

The President, Mr. REGINALD BLOMFIELD, A.R.A., in the Chair.

MR. AXEL HAIG, who rose at the invitation of the President, said he was a native of, and had spent his early schooldays at Visby in Gotland, and could confirm all that Mr. Porter had said. He remembered as a boy that they would sometimes hear terrific noises during the night, and in the morning it would be found that the noises had been caused by the fall of portions of the old town walls. It used to make them feel very sad, for the memories of the past greatness of their city were most precious to them. At the right-hand lower corner of Mr. Porter's plan would be seen a dotted space representing the site of the old castle built by King Eric—a very strong, fine, picturesque building. There still remained a corner tower which they would all admire; it was a pity that it was the only part left of the great quadrangle of buildings. In the seventeenth century King Charles XI. of Sweden, the father of Charles XII., wanted material and lime for the building of Carlskrona, and many of the stones from the castle were taken for the purpose. There was another part of the inside wall which they ought to know a little more about, namely, the middle of the western wall, which stood near the water. Here were the remains of a castle called "Kalfskinshuset," i.e. "Calf's Hide House," the space having been got from the town in the same way as the space was got for the building of Carthage, by cutting a hide into thin strips and surrounding therewith the entire area required for the building. Only the cellar walls and some vaults remained, and these were within the precincts of the Burgomaster's house. The castle owed its origin to a great warrior, Severin Norrby, a faithful adherent of the cruel King Christian II. of Denmark, who beheaded so many people. This man was a pirate, and brought in ships from the Baltic Sea. The old harbour of Norrby's time, which is now filled in, was to the north of the two which were shown in the plan. Some years ago he (Mr. Haig) made an etching showing the old town seen from the sea; in the middle distance was the Gothic palace called "Kalfskinshuset," and in the foreground a captured ship being towed into the harbour by some of Norrby's boats. The etching is called "Towing in the Prize." Among Mr. Porter's illustrations was the cathedral, the only church now in use, with the restoration of which he (Mr. Haig) had had a great deal to do. It was interesting to note that after a fire in the eighteenth century, the nave wall had been repaired and hidden by the aisle-roof, and nobody knew, except those who were familiar with the place, that there was a row of windows under the cornice. He lowered that aisle-roof, and exposed the windows. They were not proper clerestory

windows, because they lighted only the loft above the nave, but from the outside they took the place of clerestory windows. The towers were built in the middle of the eighteenth century after the fire. He had enjoyed the Paper very much indeed, and he begged the meeting to unite with him in giving Mr. Porter a very hearty vote of thanks.

MR. GEOFFRY LUCAS [F.], in seconding the vote of thanks, said that when he first set eyes on the walls of Visby last July they had a somewhat inhospitable appearance, for he arrived, as was usual, at 5.30 in the morning, from Stockholm, and found the hotels full. The walls were certainly most romantic and interesting, and the town itself very fascinating with its winding narrow streets and little whitewashed houses. Built on a slope, the white houses, green foliage, ruined churches and walls, blue sea and bright sunshine made up the most charming picture that could be imagined. The churches were especially remarkable and interesting, and certainly repaid careful study. Here in England we had a few churches with double naves, but something of the sort was a frequent feature in Gotland, and was also found on the mainland. In the churches in the country around there were apparently two naves, but this was not really so; it was due to the peculiar system of vaulting. He might add that every church he saw in Sweden was vaulted, and the vaults partook of a domical character. Mr. Porter said that the walls of Visby were intended to safeguard a rich mercantile centre. That was the impression they gave. Yet it seemed to him that they were rather amateur fortifications, and this was perhaps shown in their many clearly evidenced alterations and additions; there was not that excellent science displayed in their disposition such as was to be found in the great fortified centres of France, but perhaps they were of earlier date than the fortifications of other European cities he had in his mind, being amended later to withstand advanced military skill. There was one aspect of the walls which Mr. Porter had only just mentioned—viz., the moat, ditch, or dyke which surrounded them. This was an immense ditch cut out of the limestone rock, and it still existed. It was threefold on the north side, and wide and spacious on the east. The inhabitants of the town evidently relied very largely on this moat (from which probably they got the material for building the walls) to keep the invaders from reaching the base of the fortifications. Mr. Porter had remarked that Visby was the one city of Gotland. That was so, and it seemed characteristic of Scandinavia generally that the population was widely spread over the ground. They were more or less a nation of peasants; not as we understood the

term in England, uneducated and working only for somebody else, but land-owners and people of importance, who had a voice in the Government, had greatly influenced the history of the nation, and really were the mainstay of the country. As was known, Sweden was to-day celebrated for its system of small holdings. For that reason the towns were not of such importance as dwelling places as they were in England; they were centres for education and commercial enterprise. It must be remembered that the population of the whole of Sweden was less than that of London, and it was remarkable how, while there were large and busy towns, the people were so well spread over the land. Old Visby itself was the centre for various foreign merchants and particular associations of people who congregated there and protected themselves by these walls against the peasant Gotlanders, and outside invaders. Perhaps but little was known here of mediæval work in Sweden; there was, however, a considerable amount that was charming and interesting. He had had the pleasure of being shown some of it by Professor Curman, of Upsala, particularly the Cathedral of Strengnäs which he had partly restored. A better example of careful restoration by one who was an absolute enthusiast about his work it would be impossible to find. The church was of very considerable size, and the whole of the vault was covered with coloured decorations. Professor Curman's method of restoration—or perhaps not so much restoration as perpetuation—was splendid. The people of Visby are very loyal. It was the anniversary of the Queen's birthday when he was there, and the national flag was flying on every tower; these blue and yellow national emblems fluttering in the breeze added greatly to the picturesqueness of the scene, and though he paid more attention to the churches of Visby than to the walls, he carried away from there a strong impression of the aspect of a fortified mediæval city which he would not have missed the opportunity of gaining, and which formed a striking contrast to the progressive cities of the mainland.

PROFESSOR BERESFORD PITE [F.], in supporting the vote of thanks to Mr. Porter, spoke of the peculiar and special pleasure it was to members to see their old friend Mr. Axel Haig, who was a very distinguished Scandinavian. They had always pictured a Viking as more or less like Mr. Haig, in the somewhat remote past, and besides had valued his charming drawings. The subject Mr. Porter had brought before them was very interesting, but it was scarcely artistic, except in an indirect sense, as there was no architectural style about fortifications at all; the walls of York did not differ very much from those of Visby, and the walls of Dover Castle did not vary a great deal from the fortifications of Nuremberg. If one stripped away the little detail round a particular doorway, the walls at these various places were much the same in height, scheme of military usefulness, and much

about the same thickness. Visby, from what they had seen of it on the screen, might well have been some unknown English port or town. But there was much fascination about this fortification, because one wondered what on earth was the use of the towers? How did the machine work? Probably the most enlightening publication on that subject was the series of articles by Viollet-le-Duc, in the *Dictionnaire Raisonné*. That made perfectly clear why the towers were open inside. He showed the floor and the cranes for pulling up the material, and how the towers were used as military stores. He (Professor Pite) imagined the battlements of Visby were covered with hounds, and he detected the holes for the putlogs, and on the towers were the holes for the ledges for the fighting gallery outside which was covered with a roof of tile or slate. Mr. Burges understood that aspect of walled cities and fortifications, and his work at Cardiff Castle showed us what a patch of Visby might have looked like when it was in fighting trim. He would commend the whole subject to architectural students from the point of view of the purpose and usefulness of these fortifications. They were not of much use to us architecturally otherwise, as there was very little detail, and their random picturesqueness was redolent of the Battersea Park grotto order, and that was not very useful, after all. The main lesson was concerned with the entire directness and purposefulness of the whole business. It meant war and defence, and unless we took the pains to understand military science, at the best the study would not be a very practical one. But if we could open our eyes to that, and begin to realise why and wherefore these things were so constructed, we should find there were few subjects more fascinating. The town of Rothenburg, in Bavaria, still had hounds and galleries, with wooden staircases, walls, towers, and almost all the machinery of the siege itself. In some parts of Nuremberg they existed, but he did not think we had got any left at home, other than those which Burges re-created for us. But York was very interesting. One could run round the walls of York, on the top, and form a fair idea of how it worked. But he most cordially invited members of the Institute who were resident in London not to forget that we had a live fortress in London still; that if anything went wrong with the dockers, or with anybody else, we should turn our attention to the Tower, which was our military centre, and one of the few mediæval fortresses still kept in fighting trim. It was an instance of a mediæval castle used to-day for the purpose of military force, and it had been that for over eight hundred years. The Tower of London occupied very much the position with regard to an important port and the important sea trade that the fortress of Visby did. There was one broad distinction between these continental towns and our own country; the continental towns were practically independent corporations, republics, or states, and they had

to arm themselves not only against pirates and brigands, but also against their own neighbours.

MR. C. FITZROY DOLL [F.] said that what interested him more even than the walls of Visby was what had happened within those walls. They were to the Teutonic race what the walls of Rome were to the Latin race. Within the walls of Visby was sown the seed which under their protection germinated and grew up in time to be the greatest social power, the "Third Estate." The merchants, having suffered for a long time from the depredations of robber knights, militant bishops, and the hordes of freebooters that infested Germany and Europe generally after the first crusades, made a stronghold on the island of Gotland where they could deposit and defend their treasure with their fleet. In the Church of Santa Maria Teutonicorum in Visby was deposited the chest of the Hanseatic League, that great League with which were mixed up the people of England, in a manner which very few of us realised or had ever taken the trouble to find out. Professor Dohme, in Berlin, had remarked to him that the history of the Hanseatic League was so vast that it had even frightened Mommsen, Ranke, and Geffkens, none of whom cared to approach such a huge task. The Hansa had a bearing on our social condition, and on everything which had grown up during the Middle Ages, and the literature was so enormous that a Commission would be needed even to read the papers which are stored in the cities which formerly formed the League. There was Visby, and there were three other cities, Lübeck, Dortmund, and Soest—the Sasutum of Tacitus, whence Varus led his legions never to return again—each had its Alderman, to whom was entrusted a key of the chest he had referred to. Each of these towns had a key on a shield for their arms. From that organisation, which was started at Visby, was created the whole series of factories which reached from Nijni Novgorod to Bristol and Bergen to Ghent. In London and in all the northern cities of Europe the Hanseatic League was more or less paramount as a mercantile organisation. There was no doubt that the whole of our London municipal government emanated from that combination. The Soester Schraa, or great writing, which may be seen there was the basis of the municipal law of London. In the Guildhall were preserved the documents which were written at the time, and they had been published by the historian Schultze, in Germany. The Hanseatic League even gave us our money; to this day we speak of our money as sterling, the name having come from the Hanseatic merchants, who were called "esterlings." Nearly all the guilds of London came from that organisation. He only wished that the young men in the profession would go to some of those Hanse towns in the North. They all go South, and make Italian architecture their study, only to return and erect buildings in no way suited to our climate and necessities. But

if they were to go to some of these North European towns they would see there most instructive examples of the art of their forefathers and the kind of material with which some of the men with the greatest reputations, even at the present day, had filled their sketch-books. Certainly these famous old towns were the most picturesque that he knew, and they appealed, and ought to appeal, to every Englishman as the architectural expression of the land from which his forefathers sprang.

THE PRESIDENT, in putting the vote, said that these old German towns were immensely interesting historically, and immensely picturesque, but he could not support Mr. Doll's recommendation to their students to go and study there, unless it was for historical purposes. To study their art, they should go to headquarters, to France and Italy, for Gothic and Neo-classic. Professor Pite had pointed out the practical purposes for which these structures were originally designed, and, by implication, had shown how useless they were unless for practical purposes. That was a point which Mr. Porter had touched upon, and he should like to see it carried further, for the development of military fortifications was a subject which might well be studied. They had a very remarkable instance of it in the walls of Visby, and in other towns; one knew about the bastions, and the very curious plans which they arrived at in the fifteenth and sixteenth centuries. Mr. Porter's Paper was a most delightful one, and it had evidently been a labour of love to him; he had done his work very thoroughly, and had told them things which were new to many of them. Looking at the geographical position of Gotland one could understand its history, because it lay in the main sea-road for coasting ships going west and east, which was very important: its geographical position had much to do with what happened. They had also to thank Mr. Porter for the beautiful views he had shown them, and the patient way in which he had worked out the history of this dead city. There were many others—Carcassonne, Aigues Mortes, Brouage in the west of France, Veere near Middleburg, Bruges, and others—which it would well repay their students to take up and study.

MR. PORTER, in reply, said it had indeed been a labour of love to work out these few details. He did not mean to suggest, and he hoped he had not, that when he had finished with the walls of Visby, there was not enough to induce any member to go to this interesting place and tell them some more. He would suggest that Mr. Haig should read a paper on that very interesting work which was now being carried out under Dr. Ekhoft at the churches of St. Clement's and St. Nicholas—St. Clement's perhaps especially, where the foundations of three former churches had already been uncovered. But he had only just touched the fringe of the subject, and he was perfectly satisfied if anything he had said would lead others to go there.

REVIEWS.

ARCHITECTURAL DRAWING.

Architectural Drawing and Draughtsmen. By Reginald Blomfield, A.R.A. With 103 illustrations. Sm. 4to. Lond. 1912. 10s. 6d. net. [Cassell & Co., Ltd.]

Mr. Blomfield's new volume, *Architectural Drawing and Draughtsmen*, is, like all his previous work, a thoroughly satisfactory and almost exhaustive treatise on the subject he is dealing with. It possesses, too, the great advantage of close association with the still more important work he has already done. An account of draughtsmanship could scarcely be thoroughly worked out except by one who had an adequate knowledge of the phases of practical art with which it had been associated. Nor does his method of dealing with his subject leave anything to be desired: he has arranged it according to the nationalities which were the most conspicuous in the development of the art, both practical and pictorial, showing alike the phases which were manifested in each case, the relation between building and drawing, and the influence exercised by one country over another. The illustrations are well selected and admirably reproduced, and the book is one which cannot fail to exercise a valuable influence both on drawing and design. I shall assume that all who take an interest in architecture or draughtsmanship will seize the opportunity of closely studying the work; and propose to put on record the thoughts which have occurred to me in reading it, whether in assent or dissent from the views set forth or implied.

The primary impression on the reader will be (certainly it has been so in my own case) that of the exuberant inspiration of the Renaissance; of a wealth of imagination which could not be content with realisation in concrete form, but welled over into pictorial invention, often uncontrolled by considerations of the practical; sometimes weird, bizarre, and fantastic, but always suggestive and interesting. It would be scarcely an exaggeration to speak of the new movement as an intoxication which required Bacchanalian orgies as an outlet, or to compare its developments to those of another art admittedly free from practical restrictions. Such drawings as Piranesi's *Carceri* series can scarcely fail to recall the wilder fantasies of Berlioz or Grieg. (I wonder, by the way, why the author failed to mention Méryon, the French etcher, whose work shows some affinity with that of Piranesi. The comparison is specially interesting, seeing that, in the case of the Frenchman, genius which is "akin to madness" seems to have definitely passed the border-line of which the Italian just stopped short.) It is fortunate too for us that the conditions of an earlier time gave opportunities for the display of this exuberance which are denied to our own age: the backgrounds of pictures, the scenery of the stage, especially for the presentation of masques, the title-pages of books,—all afforded scope for its display. Even

these pictorial safety-valves proved insufficient; and many actual buildings, started on a scale which the extravagance of the impulse dictated, but left incomplete or subsequently reduced in size, bear witness to a megalomania which gratified one inspired generation and impoverished its more prosaic successors. No one has understood more thoroughly or brought home to us more vividly the force of the Renaissance as displayed in architectural or quasi-architectural design than the author of this book.

It is scarcely surprising that I, brought up in an heretical school and incompletely purged of the consequent taint, should differ from Mr. Blomfield in certain points which, after all, are more or less irrelevant to his main argument, and so slight as to be difficult to define. I must therefore allow myself to be somewhat discursive.

There is no doubt that a majority of Gothic buildings, especially in this country, present a somewhat casual appearance and show little trace of organised design; and there is often so great a charm attaching to such incoherent effects that we are apt to think that they represent the essence rather than the accidents of the style. Indeed, so far was theory, based on this misunderstanding, at one time carried that a reviewer in the *Quarterly*, some forty years or more ago, maintained that it was only necessary to dismiss the designer and trust to the fortuitous concurrence of self-inspired masons to recover the conditions of the greatest of mediæval achievements. Nevertheless, I believe that this impression of uncontrolled and unorganised effort is misleading; that it is largely due to circumstance, to the Black Death of the fourteenth, and, in a less degree, to the Civil Wars of the fifteenth century, which interfered with the full realisation of the ideal of the Middle Ages, arrested the completion of coherent design, and left to the imperfectly trained artificer work which, under more favourable conditions, would have been developed by an organisation of more accomplished workmen. It seems possible, notwithstanding the paucity of records, to detect a leading distinction between the two strains of work,—between the casual or vernacular, and that which is well ordered and fully considered; and of the latter there is a sufficiency in England, a superfluity on the Continent, to establish the fact that Gothic architecture at its best carries full internal evidence of deliberate and mature design. Mr. Blomfield has shown us clearly what methods the monuments of the Middle Ages indicate, and has put on record the small amount of documentary evidence which survives. It is, indeed, strange that so much has been hid in the mist of an antiquity not, after all, so very remote. I am inclined to differ from his conclusions only so far as this: I can recognise but one distinction between the mediæval and the modern method,—that the designer was then on the spot and closely associated with the workman, and that, having to deal with

organised and trained artificers, the control he was called on to exercise was probably far less onerous and extensive than that which is required of the modern architect. But I cannot admit that this suggests the possibility of any beneficial change of method in the present, the former conditions being irrecoverable.

What was the function of those few whose names have survived as architects, apart from that of the master-mason, it is not easy to determine. I think, however, that at least in one case, that of William of Wykeham, it must have been more than that of mere patron or paymaster, and for these reasons: Wykeham had been the King's Surveyor at an early age, and before he had embarked on a definitely ecclesiastical career: the work executed under his supervision at Windsor shows a definite affinity to that of his later years: this later work bears the common impress of a marked individuality; and the latest executed at the charges of his estate, either in his extreme old age or, as some maintain, after his death, shows a distinct inferiority to that which preceded it. It could, indeed, scarcely be an exaggeration to assert that it was disgracefully scamped.

On the subject of the growth of the Romantic movement and the lapse of the classical tradition in architecture, Mr. Blomfield has some interesting pages. I should, however, be disposed to differ from him in respect of some of his conclusions. In the first place, I find it difficult to believe that Pope exercised any influence in the direction either of the Romantic movement or of the revival of Gothic. For the latter there seems to be nothing to show except a mild flirtation with the artificial ruin, evidenced by a "grotto" at Twickenham: for the former, he seems to have done more than any writer of the eighteenth century to rivet the chains of classicism: indeed, his influence on these lines was felt even in the earlier years of the nineteenth. Gray, on the other hand, though in the main an exponent of the classical tradition, gives a decided lead in the other direction. His letters to Walpole show that he was a student of Gothic architecture: he contributed to a history of Ely Cathedral, and came so far under the influence of the Romantic movement in literature as to think it worth while to learn Icelandic, and in later life to try his hand on poems based on Scandinavian and early British examples. He was, moreover, an ardent lover of picturesque scenery—and so marks the parting of the ways more perhaps than any other figure in literature.

Mr. Blomfield appears to me to attribute the interruption of the classical tradition in architecture exclusively to the new heresy, which he says has "retarded the development of architecture in the country by at least a hundred years." I should, myself, incline, even accepting his view that the Gothic revival had in itself been altogether an evil, to put the blame at least as much on the later exponents of the classical school as on the innovators.

Had it not been that the former was beginning to loose its hold, it is, to me, inconceivable that such freaks as Batty Langley's Gothicisation of the "Orders" and Walpole's Strawberry Hill in architecture, or Macpherson's *Ossian* and the *Castle of Otranto* in literature, could have led to any considerable innovation. It seems to me that, after the influence of Wren had worked itself out, the phases that succeeded, though productive of much that possessed charm, had little of the quality which gives promise for the future. It was for the most part effete and decadent, and led by easy stages to a degraded vernacular which could not be expected to survive.

In this respect the development was not dissimilar to that which somewhat earlier took place in literature. Readers could no more continue to put up with stale classical tricks such as that of personification, carried by Vergil to the brink of insincerity, but degraded by the later classicists to an artificiality which is thoroughly absurd,—with Gray's "creeping Gaius" or Collins' "brown Exercise," than in architecture to accept as features of a living art the unmeaning paraphernalia of an effete classicism. In art, as in politics, a point may be reached when reformation may be impossible and revolution inevitable; and this appears to me to have been the condition both of architecture and literature towards the close of the eighteenth century. If so, and always presuming that the future lies exclusively with the classical idea, the new motive introduced may in the long run prove to have been the best if not the only way out of what had become an *impasse*; and classical architecture may ultimately have to be grateful for an interregnum which enabled it to start again with a new vitality.

In conclusion I may remark that Mr. Blomfield carefully avoids producing the impression that draughtsmanship and architecture are interchangeable terms, and is sufficiently aware of the self-illusion which accomplishment in drawing may produce—a danger indicated by Burges' sarcasm on a contemporary, here recorded, that it was "a pity he could not build his cross-hatching."

BASIL CHAMPNEYS.

NOTES ON THE TOWN PLANNING ACT MEMORANDUM.

By RAYMOND UNWIN [F.]

ONCE more, at the close of the third year since the passing of the Housing and Town Planning Act, an interesting Memorandum has been issued by the Local Government Board giving particulars of the work accomplished under the Act, particulars which deserve some notice and analysis. It will be well to take separately Part I., which deals with Housing, and Part II., which deals with Town Planning.

PART I.

One of the most satisfactory results of the working of the Act is the number of houses which have been put into proper repair owing to the new powers conferred upon local authorities. Under Section 15 it is provided that in houses up to a certain maximum size, varying from about 6s. 2d. per week in country districts up to 15s. 6d. per week in London, there is to be implied in every letting an undertaking that the house during the whole period of the letting shall be kept by the landlord in all respects reasonably fit for human habitation; and the local authority is given power to see that this condition is carried out. Under this clause there have been repaired, since the Act came into force, 42,534 houses. Sections 17 and 18 empower the local authorities to make closing orders for any house which is found to be unfit for human habitation, which closing orders can be withdrawn if the house is put into order. There have been put into satisfactory repair as a result of these clauses altogether 30,047 houses. A total of 72,581 houses have thus been put into satisfactory repair as a direct result of the Act.

In addition to this, the closing of houses which were in such a condition that the owners did not deem them worth repair, has removed a great number of unhealthy dwellings which the country is well quit of. Altogether, under Sections 15, 17, and 18, there have been closed or demolished, either voluntarily by the owner rather than execute repairs, or under demolition orders by the local authority, a total of 11,939 houses.

When, however, we turn to the figures relating to the building of new houses, while undoubted progress has been made, and the numbers of houses taken in hand to build are much higher in the last year than in the previous years, the total figures fall very far short of the number demolished. Apparently there have been built, or commenced to be built, by local authorities during the three years since the Act came into force, in urban areas 2,666 houses, in rural areas 398 houses, making a total of 3,064, showing on the face of it as the result of the working of the Act nearly 12,000 houses closed and only a little over 3,000 built.

The working of the Act has, however, in another manner stimulated the building of cottages. If we turn to Table 6 in the Memorandum, we shall find that the figures for the money advanced by the Public Works Loans Commissioners to Public Utility Societies, companies, or private persons under the Housing of the Working Classes Acts have risen very rapidly since the passing of the 1909 Act. The figures were rising previously, and it is therefore not possible to fix exactly how much of the increase is due to the passing of the Act, but it is probably safe to say that £250,000 of the increase is due to the Act. We have no figures showing how many houses this represents, but it would not, very likely, be less than 1,500, so that

probably a total of between 4,500 and 5,000 new houses may be credited to the working of the Housing and Town Planning Act. So far as the houses have been built by the local authorities, a large proportion of them are probably finding accommodation directly for the same class of people that have been displaced by the closing and demolition of buildings. Probably this is also true indirectly of houses that have been erected through the Public Works Loans Board, only a proportion of which will represent the smaller type of cottage. It is, however, when we analyse the figures for the rural districts that there appears to be some cause for anxiety. Here apparently, under Sections 15, 17, and 18 there have been closed or demolished altogether 3,446 houses, whereas the total provided during the period under the Act has been 398. Thus nearly nine houses have been closed for every house built; and when we consider the great difficulty of erecting houses in rural districts to be let at rents which will even approximately cover the cost of erection, and consider further that the Public Utility Societies who have been borrowing largely from the Public Works Loans Commissioners have not hitherto been able to do much in rural districts, there appears some ground for the contention that further effort is needed to secure adequate housing accommodation in country areas. There are no figures to show what is the need in this matter, but some housing reformers of wide experience estimate that 100,000 houses may be needed at the present moment in rural areas properly to provide for the population. It must not, however, be supposed that all the good resulting from the Housing and Town Planning Act appears in these figures. In the matter of repairing houses, it is probable that a very large number are put into good repair by the owners or their agents in order to avoid having notices served upon them by the local authorities; thus the stimulus of the Act will extend over a much wider area than the figures show, extensive as this is, and the total amount of useful work in putting buildings in repair directly due to the Act must be very large. Also the President of the Local Government Board, in his recent speech at Bath, stated that a very large number of houses had been built in many rural areas outside the Act.

PART II.

Turning now to Part II, Town Planning, we find a growing activity among local authorities, but that after nearly three years no single scheme has yet become an accomplished fact; 3 have reached their final stage and are awaiting the approval of the Local Government Board. Authority has been given by the Board to local bodies to prepare 17 schemes, and to one authority to adopt a scheme; 12 further applications have been received for permission to prepare schemes; 14 local authorities have issued preliminary notices with a

view to applying for authority, while 35 others have taken preliminary steps towards the issue of these notices, making a total of 82 schemes actually in progress, and the Board have knowledge of 54 other schemes in preparation. It looks therefore as though there were 136 schemes altogether in various stages of development, in which 124 different local authorities are concerned. Considering how new this subject of Town Planning is to our local authorities, how much the work is in the hands of their officials, who already have enough routine work to pretty well fill their time, and how comparatively few people are yet qualified to handle the problem, this progress, though possibly slower than some hoped, must be admitted to be satisfactory progress in the right direction.

The disappointing element in the figures is the one "Authority given to adopt a scheme." It was hoped that owners and Public Utility Societies would under the Town Planning Act be able to secure many of its advantages by comparatively simple schemes submitted for adoption by the local authority. Unfortunately the Act provided for no adequate simplification of procedure in the case of such schemes, and it is evident that for one reason or another this part of the Act is not proving as valuable as was hoped. From the housing point of view this is unfortunate, because it is in the development of estates for housing purposes on what have come to be known as Garden City lines that we have mainly to look for improved housing accommodation. Such schemes are, at present, much hampered in their work because of the difficulty of securing the modifications in the ordinary local by-laws which are required to adapt those by-laws to such a system of development; and it would certainly be very helpful if the President of the Local Government Board could make provision for simplifying the procedure in connection with such schemes. It is also very desirable that some further provision should be made for dealing with building operations during the preparation of a scheme. Probably both these points could be met by providing that building operations on estates of single owners, or groups of owners, where the interests of adjacent property are not affected other than they would be by building carried on apart from any scheme, could be regulated by agreements made between the owners and the local authorities, which agreements should be submitted to and approved by the Local Government Board. In cases where Town Planning schemes were being prepared, or where the Local Government Board deemed it desirable that a scheme should be prepared, such agreements would be temporary in their character, and would be superseded by the scheme when it came into force.

It is only necessary to peruse some of the schemes which have reached an advanced stage to realise that they will confer an immense boon on the dis-

tricts with which they deal, and one can only hope that the progress which the last year has shown will be maintained and accelerated until the development of all growing areas is brought under the beneficial influence of a Town Planning scheme.

CORRESPONDENCE.

The Lighting of Picture Galleries and Museums.

54 Bedford Square, W.C.: 5th December 1912.

To the Editor, JOURNAL R.I.B.A.,—

DEAR SIR,—I have read with much interest the Paper in your issue of the 23rd November on the Lighting of Picture Galleries and Museums, by Mr. S. Hurst Seager. I was present at the R.I.B.A. at both Mr. Weissmann's and Mr. Edwin T. Hall's Papers on this subject, and, like Mr. Seager, have visited many galleries in the hope of finding one perfectly lighted. As Mr. Seager says, the crux in the lighting of galleries is the trouble of reflections in the picture glass, and he gives a section through a gallery showing a means of lighting which he claims will make reflection impossible.

There are, I think, two objections to his scheme. The first is that it is unreasonably extravagant. He requires that his gallery shall be 44 feet wide, and criticises the Mappin Art Gallery as not being wide enough, though it is only 5 feet less than his own in width. Such a design means that for every two pictures measuring 8 feet wide each, a floor space of 352 square feet would be required. The second objection is that a very troublesome reflection in the picture glass is that of the frames and pictures on the opposite wall. They must, of necessity, be in a strong light, and a light-toned picture facing a dark one will be reflected to a very troublesome extent.

It seems to me that when we come to the designing of a gallery we must assume a width considerably less extravagant than anything like 44 feet. I suppose nearly all designing is a matter of compromise, and a minimum width so great as that Mr. Seager proposes is impracticable in forty-nine cases out of fifty. Taking 15 to 16 feet as the average distance from which to view a picture, I should suggest that galleries be made 30 to 32 feet wide, with pictures hung on all the walls. To prevent the trouble of reflection of the skylights themselves, they should be set out on principles such as Mr. Seager quotes, following the laws of refraction of light. To prevent the reflection of the gilt frames and pictures on the opposite walls I would suggest that screens about 7 or 8 feet high should be placed down the centre of the gallery. These need not be continuous, but could be broken every 10 or 12 feet by intervals of 3 or 4 feet, and should be of some dark colour—dull red velvet for choice—to absorb the light. They might be used to display a few small pictures, but this should be done sparingly or

their object is defeated. I do not think such screens would be so unsightly, in a room of this width, as to make them objectionable, while I feel sure they would serve their purpose in preventing reflection in any pictures hung on the line. Seats could be arranged, if necessary, down the centre of the gallery, with the screen above them. Where pictures face the gaps, it would only mean that the spectator would have to move a foot or two to one side or the other in order to get a view of the picture free from reflection. In existing galleries where the width does not admit of a central screen, I think the substitution of dark frames for gilt, wherever practicable, would considerably lessen the trouble of reflection.

I think Mr. Seager has made too much of the question of light on the floor. This can always be counteracted by staining the floor with a dark dead stain which should not be polished; a dark floor is essential in any gallery, whether top or side-lighted. I am architect to the new rooms in the Gallery belonging to Dulwich College, in which Mr. Seager says that Soane's old galleries, with their high lantern lights, are lighted on a more scientific principle than the new ones. I cannot see any scientific principle in Soane's method at all. True, there is no bright light on the floors; but it is equally true that the only portions of the galleries that are at all effectively lighted are the portions of the walls higher than 11 feet above floor level. I have recently put a skylight over the central octagonal lantern in the old gallery; the new skylight, which replaces the flat plaster ceiling of Soane's lantern, is solid in the centre so as to reduce, as far as possible, the light thrown on the floor. One has only to compare this room with the other similar rooms lighted only by Soane's lantern to see that there is no comparison as to which is the better lighting.—Yours faithfully,

E. STANLEY HALL [A.]

Books Received.

- The English Fireplace: A History of the Development of the Chimney, Chimney-piece, and Firegrate, with their Accessories, from the Earliest Times to the Beginning of the Nineteenth Century.* By L. A. Shuffrey. Illustrated by 130 colotype plates from photographs chiefly by W. Galsworthy Davie, and many other illustrations. 8m. 40. Lond. 1912. 21s. net. [B. T. Batsford, 94 High Holborn.]
- Old Houses and Village Buildings in East Anglia, Norfolk, Suffolk, and Essex.* By Basil Oliver [A.]. Illustrated by Colotype Plates from photographs specially taken by Horace Dan, Sydney A. Driver, and others, with numerous illustrations in the text. 8m. 40. Lond. 1912. 21s. net. [Batsford.]
- The Art and Craft of Garden Making.* By Thomas A. Mawson [Hon. A.]. Fourth Edition. Fo. Lond. 1912. 50s. net. [Batsford.]
- English Homes of the Early Renaissance: Elizabethan and Jacobean Houses and Gardens.* Edited by H. Arvey Tipping, M.A., F.S.A. Fo. Lond. 1912. Two guineas net. ["Country Life," 20 Tavistock Street, Covent Garden, W.C.]
- Gardens for Small Country Houses.* By Gertrude Jokyll and Lawrence Weaver. 4to. Lond. and New York. 1912. 15s. net. ["Country Life," 20 Tavistock Street, Covent Garden, W.C.]



9 CONDUIT STREET, LONDON, W., 21st December 1912.

CHRONICLE.

A New Allied Society.

At the General Meeting of the Institute on Monday, 16th December, the Secretary announced that the Council, in the exercise of its discretion under By-law 78, had admitted to alliance with the Institute the South Australian Institute of Architects. This Institute, whose centre is Adelaide, was founded in 1886 and incorporated in 1890. Its membership numbers twenty-five Fellows and fifteen Associates. Under the new rules contemplated by the South Australian Institute, the articles of apprenticeship of pupils in its district will have to be registered with the Institute, and the date of registration will be taken as the date of commencement of apprenticeship. No articles will be registered until the pupil has passed the Junior Public Examination of the University, or its equivalent. Candidates for Associateship must submit Testimonies of Study required by the R.I.B.A., and pass an examination following the lines of the R.I.B.A. Intermediate and Final. This latest addition brings up the total of the Allied Societies to twenty-eight, distributed as follows: nineteen in the United Kingdom, four in Australia, three in South Africa, one in Canada (with which are federated all the provincial associations), and one in New Zealand.

The London Society.

From T. RAFFLES-DAVISON [Hon. A.]—

It is just twelve months since the formation of the London Society was suggested in the columns of the Institute JOURNAL, and already its influence has been exerted in many directions. Its membership is already considerable, and is rapidly extending. The Society should make a special appeal to architects, and it is hoped that all London architects will give it their support by becoming members. The Marquis of Salisbury and the Hon. W. F. D. Smith have just been included amongst the Vice-Presidents. The great ground landlords of London are represented by the Earl of Cadogan and others, while the Government may be said to be represented by the Rt. Hon. John Burns. Lord Blyth, Lord Balcarras, Lord Claud Hamil-

ton, Lord Alverstone, Lord Alexander Thynne, Sir Edward Poynter, P.R.A., Sir Aston Webb, R.A., Prof. Reginald Blomfield, A.R.A., Sir J. Williams Benn, Captain Jessel, M.P., Sir Melville Beechcroft, Sir J. Prichard Jones, Sir John Wolfe Barry, Sir George Alexander, &c., are names which indicate the wide support the Society is receiving irrespective of party or profession. It is hoped that the Mansion House meeting on the 13th of January, at which the Lord Mayor will preside, may bring home to the public some realisation of the important part which this Society of London citizens is destined to take in the future development and beautification of London.

The Safety of St. Paul's Cathedral.

Mr. Mervyn Macartney [F.], Surveyor to the Fabric of St. Paul's, has again sounded a warning note as to the danger to the Cathedral of allowing a tram subway to be constructed within a few feet of its east end. He points out that the distance from the end walls of the Cathedral to the side of the proposed tunnel is 65 feet, and the bottom is only 6 feet above the footings at their deepest point. St. Paul's stands on a thin bed of marl under which is over 40 feet of loose sand-gravel held together by the presence of water.

"If this is tapped in any way," says Mr. Macartney in a letter to *The Times*, "subsidence is bound to follow, with what peril to the Cathedral I care not to predict."

"Tunnels of any kind would tend inevitably to disturb the water lodged in the subsoil and cause it to drain off. And it is the fear of this as much as of the inevitable intermittent vibration of subterranean traffic which causes the Dean and Chapter to make this protest."

"In brief, as the Cathedral stands, with its vast untied spaces, its enormous weight brought to earth by a few piers, and its exact equilibrium, it is safe only so long as the subsoil remains undisturbed."

"No proposal I have heard of short of underpinning the whole area of the Cathedral and taking the foundations down to the clay some 50 feet below the present foundations would, in my opinion, safeguard the building."

The Parliamentary Committee of the London County Council state that the Highways Committee were not only advised when the scheme for the construction of these tramways and of the subway was under consideration in 1911 that there was no ground for apprehension that the construction of the subway would involve any risk to the Cathedral, but that the chief engineer had reported to them that the view previously held by him had been strengthened by additional facts which had since come to light, and that, moreover, in his opinion, there was no danger from any vibration from the working of the tramcars. The Highways Committee state further that the question was most carefully considered in connection with the promotion of the Act which authorised the construction of St. Paul's Bridge, and the conclusion was then arrived at that no risk to the Cathedral was involved.

Mr. Macartney has lately discovered some old letters written in the year 1831 and at other dates, from which it appears that the opposition of Mr. Cockerell (the then Surveyor to the Cathedral) to a proposal to construct a sewer on the south side of the Cathedral had the support of the two famous engineers, Rennie and Brunel. Extracts from these letters were published in *The Times* of the 17th December. A report was eventually drawn up by Rennie, Robert Smirke, and Cockerell, in which they stated that, however carefully the work was carried out, it would be impossible to prevent some degree of motion from taking place in the stratum of sand and gravel, either during the construction of the sewer, or at a future period in consequence of it. There is evidence to show that Brunel not only had a hand in this report, but that he and Rennie also presented another report soon afterwards on the same question. The result was that the sewer project was finally dropped.

A conference was held last Tuesday between representatives of the Dean and Chapter of St. Paul's and representatives of the Parliamentary and Highways Committees of the London County Council to discuss the possibility of withdrawing from the Council's Bill, which was recently presented to Parliament, the clause which proposes to construct a tramway subway under St. Paul's Churchyard. No definite decision was come to, but the matter is to be considered by the Parliamentary Committee early after the Christmas recess and will come before the County Council in due course.

The New School of Architecture at the National University of Ireland.

Professor W. A. Scott [A.], A.R.H.A., has sent to the Institute a copy of his address delivered on the occasion of the meeting held in connection with the establishment of the School of Architecture at the National University of Ireland. The idea of this school originated with the Royal Institute of the Architects of Ireland some years ago, when the constitution of the National University was under consideration, and it is due to their efforts that the School has become an accomplished fact. At the inaugural meeting, which was presided over by Mr. Albert E. Murray [F.], President of the Irish Institute, the Lord Lieutenant of Ireland was present, and at the conclusion of Professor Scott's address, which is briefly summarised below, the meeting, on the motion of His Excellency, resolved, "That the establishment of a Chair of Architecture in the National University of Ireland was an undoubted benefit to the country, by affording facilities for the study and the encouragement of the ancient art of architecture."

Professor Scott, in the course of his address, described the aims, objects, and curriculum of the new school, and showed what had been done in England, especially at Liverpool and London, to give

the profession of architecture a University hall-mark. In France and America, he pointed out, the relative superiority of an architect's position was a direct result of the recognition of the fact that architecture, like all great, ennobling, and responsible callings, required knowledge, preparation, and study. A University training necessitated (1) a good general education, without which the student could not commence his special studies; (2) it enabled him to get a comprehensive idea of what architecture meant, a general grasp which would be supplemented afterwards by his specialised experiences; (3) it enabled him to mix with and to hold his own with men destined for his own and other professions, and this enlarged his sympathies with and understanding of the great facts of life. The student in their School of Architecture would have first to matriculate in the University. He would have to follow a regulated course of study extending over a period of three years, and would be required to pass three examinations, one in each year. The first year's work would include architectural history, architectural drawing and model and free-hand drawing, mathematics, mathematical physics, experimental physics or chemistry, and a modern Continental language. The second and third years would be taken up with the more advanced stages of the same subjects, and include, in addition, mechanics of structure, modelling, painting, or decoration, and sanitary engineering. In the second year designs would be made, and measured drawings of buildings. At the end of the third year the student would take up practical architectural work, engaging himself for this purpose in the office of a practising architect for not less than two years. Thus five years from the time of his first entering the college would be occupied by the student before he could present himself for his degree examination. All through the course the student would have to satisfy the authorities that he was complying with the regulations, and give consistent evidence of solid work. The courses of the school were in harmony with those approved by the R.I.B.A. Board of Architectural Education, and it would be one of their aims to get in touch with the Board. It was only in the fitness of things, said Professor Scott, that Dublin should become the centre of a flourishing "School of Architecture": they had so many examples of elegant buildings erected by their forefathers, tastefully and skilfully designed, displaying refinement and thought, and remarkable as indicating the desire of those who had gone before them to attain the highest standard of artistic excellence and culture.

Preservation of Ancient Monuments and Historic Buildings in Great Britain.

The report of Mr. C. R. Peers, the Inspector of Ancient Monuments, for the year ending March 31 last, has been issued as a Parliamentary Paper [Cd. 6510]. Lord Beauchamp, the First Commissioner of Works, prefaces the report with the following statement showing the arrangements made for the administration of the Ancient Monuments Protection Acts, and the considerations which have led him to ask for additional powers:—

In the first place the existing Acts are purely permissive in character. The State cannot undertake the guardianship, or arrange for the protection, of any monument, except with the consent, and indeed by the desire, of the owner.

But, when once the State has assumed control, the monument is thenceforward protected from damage

or destruction by any persons whatsoever. The owner himself is deemed to have relinquished his rights of ownership so far as relates to any injury or defacement of the monument, and may be dealt with as if he were not the owner. Further than this, the Commissioners of Works are bound to maintain the monument out of such moneys as may be provided for the purpose by Parliament; the expression "maintain" includes "the fencing, repairing, cleansing, covering in, or doing any other act or thing which may be required for the purpose of repairing any monument or protecting the same from injury or decay." It is obvious that the cost of such maintenance must vary considerably in different cases; but the principles upon which the Commissioners are proceeding are to avoid, as far as possible, anything which can be considered in the nature of restoration, to do nothing which could impair the archaeological interest of the monuments, and to confine themselves rigorously to such works as may be necessary to ensure their stability, to accentuate their interest, and to perpetuate their existence in the form in which they have come down to us.

It is hoped that in this way the various monuments throughout the country, in the charge of the Commissioners, will become object lessons of the manner in which such remains should be treated, and will thus possess an educational, as well as an archaeological and artistic value.

To advise and assist them in this respect is the duty of the Inspector of Ancient Monuments, and the work itself is carried out by a special staff which has now been created for the purpose and which works in the closest co-operation with the Inspector and can do nothing except with his approval. It may, I think, therefore be claimed that the branch of the Office of Works entrusted with the administration of the existing Acts is efficiently organised for the work it is required to perform.

This being so, it is gratifying to be able to say that the number of monuments of which the State has assumed, or has been asked to assume, the guardianship is increasing rapidly, as owners are beginning to realise the purposes of the Acts. At the same time, cases are frequently being brought to my notice of monuments which are suffering from neglect or threatened with actual damage or destruction. Some of these have been brought clearly to the notice of the general public, and it is evident that considerable interest is now taken in the subject, and that that interest is rapidly growing; this very fact, however, tends in some degree to intensify the danger, as there can be little doubt that in some cases the threat of destruction or removal is employed with the object of creating a fictitious value. Cases such as these, however, are not of frequent occurrence, and the danger is, perhaps, sometimes more apparent than real; far more numerous are the cases in which monuments are suffering merely from neglect, and are being allowed slowly to fall into decay because the owner is unwilling himself to preserve them or to place them under the protection of the State.

It is, in my opinion, most desirable that the State should have power to intervene in such cases, and it is with that object that I am seeking further powers in the present Session.

Mr. Peers states in his report that the number of monuments now under the care of the Commissioners of Works is 116, and he gives details of the works of reparation carried out on various buildings during the period under notice. Complete series

of 12-inch by 10-inch photographs have been made of monuments newly brought under the Acts, to form a record of their condition when they came under State protection; a second series is to be added showing the monuments after repair. Plans are being prepared in every case, with a view to publication in a series of official guides. The Report includes short descriptions of monuments lately taken over, together with schedules of ancient monuments and historic buildings in Great Britain now in charge of the Commissioners. Mr. Peers says that a serious obstacle to the adequate protection of ancient buildings is that so far the prevention of decay in stonework is in the experimental stage. A mass of material is, however, becoming available, and he suggests the publication of an official handbook on the subject.

New Delhi.

In the House of Commons on the 10th inst. Mr. KING asked the Under-Secretary for India whether an eminent architect, other than Mr. Lutyens, had visited India in connection with plans for the new Delhi; whether this architect was consulted by the Viceroy and reported to him in favour of Indian craftsmen being employed in the new Delhi; whether the expenses of this architect's journey were paid by the India Office; and whether, seeing that there was a conflict of expert opinion as to the manner and style in which the new Delhi should be built, further authorities would be consulted before a decision was taken.—Mr. H. BAKER, who replied, said that Mr. H. V. Lanchester was engaged to pay a visit to India as a consulting expert to advise as to the site for the new city of Delhi, his expenses being paid by the India Office. The further question of the construction of the buildings had yet to be decided, and the Secretary of State was not prepared at present to make a statement on the subject.

Mr. KING asked whether the Viceroy, the Government of India, or the India Office was to decide the question of the architects and style of architecture to be employed in the buildings of the new Delhi.—Mr. H. BAKER: The final decision rests with the Secretary of State in Council.

Mr. KING: Will the pledge given by the Under-Secretary of State for India in the course of the Indian Budget, that there would be an open competition for these buildings, be carried out?—Mr. H. BAKER: If a pledge was given I am sure it will be carried out.

Westminster Hospital Site.

At the same sitting, Sir H. CRAIK asked Mr. Wedgwood Benn, as representing the First Commissioner of Works, if he would say what power the Government had in respect of the site now occupied by the Westminster Hospital; and if, in the event of the removal of the hospital, that power would be exercised in order to secure that the site

should be used in a manner suitable to the dignity of the situation and so as to provide for the highest public advantage in the future.—Mr. WEDGWOOD BENN: The site cannot be used for any other purpose than that of a hospital without the consent of the Crown; and there are various restrictions as to buildings. The Government has the subject under careful consideration from the points of view suggested by the hon. member.

The King Edward Memorial.

Mr. Wedgwood Benn stated in the House of Commons last Thursday that the King had approved a proposal that the statue to his late Majesty King Edward should be erected between the Duke of York's Column and Waterloo Place. At a meeting of the General Committee held at the Mansion House it was agreed to adopt a scheme based upon this proposal. The statue of Lord Napier, which occupies part of the site, will be removed to Trafalgar Square close to the memorials to Nelson and Gordon.

Summer School of Town Planning.

In view of the success of the first Summer School of Town Planning held at the Hampstead Garden Suburb in August last under the auspices of the University of London, it has been decided to hold a second Summer School next year at the same centre. It will last for a fortnight, commencing 2nd August and continuing till 16th August, and during that time lectures and demonstrations on Town Planning and subjects practically connected therewith will be given by some of the leading authorities. Last summer certificates were awarded to the students by the Extension Board of the London University, and it is stated that a number of architects and engineers have already found these certificates of great advantage. The Hampstead Garden Suburb, the 400 acres extension of which forms a great portion of the Town Planning Scheme recently submitted to the Local Government Board by the Finchley District Council, makes an ideal centre for a study of this kind. The practical difficulties which town planners have to overcome can here be studied on the site as they actually occur, and the lectures are rendered of considerably more value by constant illustration of outdoor practice. The School will, as before, be specially adapted to the needs of municipal engineers, architects, and surveyors. Particulars can be obtained upon application to the Hon. Secretary, Mr. J. S. Rathbone, The Institute, Hampstead Garden Suburb, London, N.W.

Whitgift Hospital, Croydon.

The further widening of North End, Croydon, near the Whitgift Hospital, has been again discussed by the Borough Council during the past week, with the result that the old Elizabethan almshouses, as far as that authority is concerned, are

now saved from demolition. The Council adopted by thirty votes to eighteen a plan of widening which will carry the new line of frontage across to the other side of the road opposite the hospital, thus leaving it intact. The scheme is estimated to cost £164,000.

St. Bartholomew's Hospital.

Mr. ROWLAND PLUMBE [F.], writes:—"Referring to the obituary notice of the late Mr. E. B. I'Anson, in the Institute JOURNAL for the 7th December, I think it desirable for the sake of accuracy to inform you that the designs which were prepared for the rebuilding of St. Bartholomew's Hospital by Mr. I'Anson in conjunction with myself, were not carried out. As a matter of fact, the hospital proper has not been rebuilt."

THE EXAMINATIONS.

The Final: Alternative Problems in Design.

In accordance with the regulations of the Council, six further problems in Design set by the Board of Architectural Education for students preparing for the Final Examination are hereinbelow published.

Instructions to Candidates.

1. The drawings, which should be on uniform sheets of paper of not less than imperial size, must be sent to the Secretary of the Board of Architectural Education, Royal Institute of British Architects, 9 Conduit Street, London, W., on or before the dates specified below.

2. Each set of drawings must be signed by the author, and his name and address, and the name of the school, if any, in which the drawings have been prepared, must be attached.

3. All designs, whether done in a school or not, must be accompanied by a declaration from the student that the design is his own work and that the drawings have been wholly executed by him. In the preparation of the design the student may profit by advice.

4. Drawings for problems (a) are to have the shadows projected at any angle of 45° in line, monochrome, or colour. Drawings for problems (b) are to be finished as working drawings. Lettering on all drawings to be in a clear scholarly character.

Subject VII.

(a) A Monumental Staircase and Vestibule to a large Museum. Scale of drawings 8 feet to 1 inch with two $\frac{1}{2}$ -inch scale detail sections.

(b) A Village Inn with not more than eight bedrooms. The site, which is not a corner one, has an 80 feet frontage with no lighting available on either side. Scale of drawings 8 feet to 1 inch with $\frac{1}{2}$ -inch scale details.

Subject VIII.

(a) A Covered Carriage Entrance to a large Hotel built in stone. Drawings required: $\frac{1}{2}$ -inch scale key elevation of the hotel façade and $\frac{1}{2}$ -inch scale detail drawings of the entrance.

(b) Design for a Gatehouse to a College. Scale of drawings 8 feet to 1 inch with $\frac{1}{2}$ -inch scale details.

Subject IX.

(a) A Monument in a Public Place containing one or more Fountains commemorating the Bringing of Water to a town. Drawings to $\frac{1}{2}$ -inch scale with one general plan of the place to $\frac{1}{2}$ -inch scale.

(b) A Design for a Bank in a small Country Town on a corner site. Scale of drawings 8 feet to 1 inch with $\frac{1}{2}$ -inch scale details.

Dates for Submission of Designs in 1913.

	Subject VII.	Subject VIII.	Subject IX.
United Kingdom	28th Feb.	30th April	30th June
Johannesburg	30th April	30th June	30th Aug.
Melbourne	31st May	31st July	30th Sept.
Sydney	31st May	31st July	30th Sept.
Toronto	31st March	31st May	31st July

MINUTES. IV.

At the Fourth General Meeting (Ordinary) of the Session 1912-13, held Monday, 16th December, 1912, at 8 p.m.—Present: Mr. Reginald Blomfield, A.R.A., President, in the Chair; 24 Fellows (including 8 members of the Council), 18 Associates (including 1 member of the Council), 5 Licentiates, and several visitors—the Minutes of the Meeting held 2nd December having been already published, were taken as read and signed as correct.

The following members attending for the first time since their election were formally admitted by the President—viz. Sidney Joseph Tatchell, Fellow; Herbert Joseph Axten, Walter George Whincop, Vasudeo Ramchandra Talvalker, Associates.

The Secretary announced that the Council had admitted to alliance with the Royal Institute under By-law 78 the South Australian Institute of Architects.

The Secretary further announced that the following Associates, having been found by the Council eligible and qualified under the Charter and By-laws, had been nominated for election to the Fellowship—viz. Herbert Austen Hall, Cyril Wontner Smith, Septimus Warwick, Herbert Winkler Wills.

Mr. Horace Porter, M.A. Cantab. [A.], having read and illustrated by lantern slides a Paper on the WALLS OF VISBY, GOTLAND, a vote of thanks was passed to him by acclamation on the motion of Mr. Axel Haig, seconded by Mr. Geoffrey Lucas [A.].

The proceedings closed, and the Meeting separated at 10 p.m.

Publisher's Announcements.

Messrs. Jarrold & Sons will issue shortly *On and Along the Thames, James I., 1603-1625*, by Mr. W. Culling Gaze, architect. The work is stated to be the outcome of many years of deep and exhaustive research and the assimilation and digestion of facts connected with the life associated with the famous river. A number of plates will be included, showing views of London along the river about the year 1616.

THE PRINCIPLES TO BE OBSERVED IN DESIGNING AND LAYING OUT TOWNS TREATED FROM THE ARCHITECTURAL STANDPOINT.

By T. HAROLD HUGHES, A.R.C.A.Lond.(Arch.) [A.], R.I.B.A. Essay Medallist 1912.

[Continued from page 82.]

(i) *Open Spaces.*

Open spaces are desiderata in every plan, and may vary in size from the vast round point or square in the heart of the town to the small enclosed place recessed from the busy street. There are two ideals in the designing of open spaces, each having its proper place. The object of one is to cast its radiance on the adjacent streets, while that of the other is to form a sense of enclosure, becoming in its nature something of an open-air room. A combination of both these ideals may at times be made, and it should be remembered that open spaces, linked together by broad avenues and well planted with trees, will form valuable and effective park systems. Open spaces which are complete in themselves and not connected up with strips of park-way can, both "open" and "enclosed," be of various shapes. Squares, oblongs, ovals, circles and ellipses, hexagons and octagons, may all be effectively used, many of these shapes giving excellent effects of light and shade on the buildings which surround them.

Good proportion and complete harmony between the open spaces and the buildings around them are essential. One of the objects of the open space being to show to advantage the buildings in relation to which it is planned, great care must be taken that it be not so large as to dwarf them, nor so small as to prevent them being properly seen. Though no definite rules can be laid down, it will be generally found that a long building will require a space longer than deep, whilst the narrow lofty building will require the reverse. Care should also be taken in the method of running streets into the "place" to preserve the regular lines of the buildings surrounding it, and important buildings should be so placed as to form interesting vistas to such streets. Uniformity in the skyline is desirable, and in places of circular or elliptical form attempts should be made to preserve the great sweeps of cornice and roof.

Large open spaces will be much used as traffic centres, and as such should not be placed in direct relation to any public buildings. They must be big enough to receive effectively the great avenues, and to preserve regularly the line of buildings round. The large round point will, when used as a "place" with traffic circulating round, and not crossing the open space, afford an excellent opportunity for some large central monument, which, with avenues entering obliquely, must be of such a form as to present a regular face to all points.

When open spaces have buildings occupying the sides only, some architectural frame to the angles, formed by trees or by columns, will be necessary to prevent any feeling of weakness at such points. Sometimes it may be necessary to group several open spaces round a building when owing to its location plenty of open ground is required, which must not, however, dwarf the building; then by some subdivision a proper setting to it on all sides may be obtained.

The value of the enclosed space should not be overlooked. The sense of enclosure may be obtained by a judicious arrangement of the incoming streets, by effectively closing the vistas of all openings out of it, by linking up the buildings with colonnades, trees, or arches, or the lines of the buildings themselves may be strong enough to carry the eye across an intervening street. Some methods of enclosing the space may be architecturally of great value, as, for

instance, the use of hemicycles as at Nancy and the Roman Fora with their magnificent colonnades are excellent examples of the happy treatment of similar problems.

When the centre of the place is laid out as a garden, well-designed piers and railings, preferably of stone, should be used. Thin cast or wrought iron fencing is ineffective in scale.

(k) *Bridges.*

In the well-laid-out town railway bridges within the city will be avoided, and the only bridges required will be those crossing some river or deep ravine, or, with streets at different levels, viaducts offering interesting problems in design. It should be borne in mind that the bridge must be satisfactory not only as seen from the top, when its proportion and vistas will be of great account, but as seen from beneath, when the proportion of its arches, its general design and connection with the embankment are the chief considerations. Naturally many lines of traffic will converge on to the approaches; these, then, may be made of great size, and possibly would be best in the form of large circuses, giving greater dignity to the bridge. The scale of the structure and its approaches must be very carefully considered in relation to the surrounding buildings—in all cases they will necessarily be so diverse that it will be advisable completely to disconnect them.

The ramps to bridges should make agreeable composition of line both with the bridge and embankment. The architectural forms which may be used to decorate the open place in front of the bridge should also have some definite connection with the embankment, welding by firm lines the river-side and open space together. Flights of steps, triumphal arches, colonnades, and trees may be used for the purpose, connecting the embankment with the bridge and giving greater importance to the approach.

Monumental bridges may be adorned with colonnades, whilst the piers will afford excellent opportunities for the introduction of sculptural decoration, and their approaches may be enhanced by triumphal arches, pylons, and great curved colonnades.

Long bridges with strongly marked architectural lines and broad formal surroundings should have no camber if it can be avoided.

When iron bridges are necessary the iron should be used in the simple straightforward manner expressive of construction in that material, and to bring the bridge into harmony with its surroundings stone abutments, pylons, and balustrades to the approach should be used, as so well exemplified in the Pont Alexandre III. at Paris.

(l) *Grouping of Buildings.*

The grouping of buildings is of the utmost importance in giving greater emphasis to the chief points in the plan, and, more effectively than can be done by a single building, however large, in making an impression upon the spectator (as it should be the designer's constant effort to do) of the bigness of scale of the city and the greatness of the civic life which the buildings express.

Public buildings must always be placed where they will be seen to best advantage and confer the greatest dignity upon the whole design. They may be grouped in a wide street, when their projections and general treatment should be modified to suit the points of view obtainable. They may be placed at the end of a long avenue, when care must be taken to proportion effectively to the latter the forecourts and open space in front, and the design itself must be composed to tell at a distance [fig. 5]. They may be built on an eminence, when a crypto porticus, great embankment walls, terraces, carriage-ways, flights of steps and buildings placed at a lower level to throw back the central mass, will all be conducive to a great monumental effect. They may be placed in conjunction with an open space or spaces, and then must be so grouped as to be well seen from the various avenues which may be connected with

them; or again, they may rise from the water's edge, when the treatment of water and architecture offers endless opportunities [fig. 8, p. 82]. A continuity of effect may be obtained by linking up the several groups of public buildings by wide avenues or strips of park-way.

The scale of the buildings must always be adjusted to the distance from which they will be usually seen, and should be suited to the size of the town which they adorn.

Buildings placed in architectural relation to one another may be all in line, some may be recessed or advanced from the general front or placed at right angles, or they may be grouped round a forecourt, or all these methods may be combined. When it is desired to preserve a vista of a building some distance away the grouping may take the form so effectively devised by Wren at Greenwich, a treatment which might also be adopted when an opportunity occurred in the streets of the town. When one building is placed behind another, it should be simple and severe in its lines as a foil to the more richly treated building in front.

In grouping, some principal units should be repeated through all the designs, thus obtaining unity of effect; and small subsidiary buildings must be so treated and placed that they may not be hindrances to the preservation of the general scale, a matter of some importance. A concentration of interest is desirable, and this, when produced by larger masses and deep shadows, will materially increase the value of the vista [fig. 7].

The buildings may be linked together by arcades, colonnades (not timidly used, but used as Bramante would have done at the Vatican!), trees, terrace walls, and steps, whilst police boxes, monuments, statuary, and flights of steps well placed will help to link up the buildings with their surroundings and to create a greater total impression. All lines of grass, steps, terrace walls, and trees or shrubs should be so laid down as to give good composition of line with the buildings and their details.

An endeavour should be made to raise the buildings, when on the flat, above the general level. When the approaching street rises it should be made of great width, and the centre part may be sunk to form a series of flat terraces, connected by steps, the broad lines of which will greatly help in the attainment of a monumental effect.

(m) Buildings in General.

Modern conditions of city life and methods of transit condemn the irregular streets and junctions; on all hands formality is required, and this formality must be carried through to the buildings, long level lines of cornice and string best suiting the straight street and formal curve.

The planner of the town, unhappily, will not supervise its execution. He must not calculate, therefore, in his disposition of the several parts, that one building by a greater projection or a greater height, or by the addition of a tower, porch, or gable required to form a pleasing termination to some vista, will be erected when the time comes for his plan to be completely carried out. Such is impossible. All points of emphasis therefore desired in the buildings must be located at the centre or angle of a façade, or any other point which would naturally receive attention at the hands of its future designer.

Some system of massing buildings together should be adopted, avoiding a multitude of little straggling units, especially in the residential quarters, where it would be better to group several houses together and throw the little bits of garden into one large open space. Similarly six or seven storied flats and hotels could be grouped together round some open space, well laid out, the sum of all the unbuilt-on areas belonging to each.

Scale should be maintained in the buildings of each quarter, and their heights might be regulated in different well-marked zones. An attempt also should be made to obtain a certain uniformity of colour and bulk in buildings on a given area. Absolute symmetry is not so essential as a balance of skyline, and it should be remembered how roof-lines affect the

appearance of the city as seen from without. Long, level lines will generally be found to suit a hilly site, whilst vertical lines will be more effective on the plain.

The character of buildings should be expressed in their elevations, certain areas expressing their purpose in the design of the edifices—a solidity and plainness will characterise those of the industrial quarter; quiet, restful lines and a homely effect those of the residential; whilst a greater richness and wealth of ornament, together with an appearance of greater dignity, will be the note for the buildings of the civic centre.

Buildings should be designed to suit the positions from which they are likely to be most seen—breaks and projections being avoided when it is impossible for the spectator to get far enough back to appreciate them properly, and the effect of the sun on the buildings according to their position should be carefully considered.

In the long city thoroughfare a judicious break might be formed by a set-back in the building line which may extend to the ground and be filled with trees or to the first floor only, leaving a roof garden, a pleasant spot of colour in the street. Similarly in the residential area long rows of buildings exactly alike should be avoided, and houses occasionally set back or brought forward from the general building line or gathered together into groups of definite form will give a welcome variety.

An effort should be made (in spite of our lack of tradition) to give some architectural character to the city, a character such as the dome gives to Byzantium, column and pediment to a Greek city, or the spire and gable to a mediæval town. Even under present conditions the establishment of a Minister of Fine Art might do much to preserve a more uniform and higher standard of design in the buildings of our towns.

II. THE TOWN'S ORNAMENTATION.

(a) *Trees, Shrubs, and Gardens.*

Of all methods of adorning our towns the use of greenery is naturally one of the most attractive, and every town plan must provide amply for trees, shrubs and gardens. These must not be thoughtlessly dotted about, but subordinated to the architecture and used to assist in the general city design. No attempt must be made to make the work of man imitate that of nature, and trees and gardens used in our cities must partake of some of the city's order and formality. The introduction of trees, shrubs, and grass may be considered under the following heads:—(1) Trees in Avenues and Open Places; (2) Shrubs, Flowers, and Gardens; (3) Plots of Grass; (4) Treillage.

1. *Trees in Avenues and Open Places.*—Trees, as spots of colour contrasting with the buildings of the city, add much to its beauty. They must not be scattered about, but will be used to best advantage when planted in some open space or forecourt or in the long lines of the street. A building of strong classic lines may gain in appearance by the contrast of a free and informal treatment of greenery in front, and so with squares which are surrounded by buildings simple in outline, as may be seen in many London examples; but care must then be exercised in the disposition of the larger trees that they do not by their bulk dwarf the buildings and prevent the square being seen as one complete and architectural scheme. In avenues less than seventy feet wide trees should not be planted in the centre of the roadway, but only at the sides and openly spaced. In wider avenues the trees may be planted in the centre in one or two lines, and may be paired or used in rows of four giving delightful shaded walks beneath. They must always be proportioned in their height and bulk to the buildings on either side. Variety can be obtained by using different kinds in the various squares, but care must then be taken to avoid anything in the nature of specimen planting. Trees may often be planted to frame-in some distant view; and long avenues of trees with some interesting

terminal vista, such as in the Luxembourg Gardens, should find a place in every city plan [fig. 2]. Trees may be effectively used to link building to building and complete some great architectural scheme.

2. *Shrubs, Flowers, and Gardens in Open Places.*—Shrubs, since smaller in size, may be planted in greater freedom. In open spaces they may be used with advantage to accentuate the angles of the gardens there laid out, or, again, clipped, used as a border and in connection with statuary to which they form an excellent background. Shrubs in boxes should be freely used in conjunction with buildings and monuments, and flanking the steps of the former they will give an added dignity. If they are to be disposed regularly as a border to open spaces, and to accentuate angles or cross paths, excellent models will be found in the Tuileries and Luxembourg Gardens. When put on parts which are paved and too small to permit of earth beds, they are of great value in "carrying through the green." Large shrubs in boxes, lining an avenue to a building, will, by the contrast of their mass and shape, give something of the effect of an avenue of obelisks before an Egyptian temple.

Parterres may be laid out in the open spaces, where masses of one kind of flower only should generally be used and not divided patches of different colours; for the shape of their beds, simple and interesting geometrical figures will always be best. In their general lines they must contribute to the total effect of the surroundings, and a fussy and restless appearance be avoided.

3. *Plots of Grass.*—Plots of grass will naturally be chiefly placed in the open squares and forecourts of public buildings, long wide stretches of grass unbroken by shrubs or flowers giving a splendid sense of breadth and repose. Intersecting paths should form good shapes to the plots, and an edging of flowers or shrubs will help more clearly to demarcate their shapes. Proportion between the paths and grass must carefully be observed, the bulk of grass (unless merely surrounding a statue) must predominate: the Schloss Garten, Vienna, is an example of the ill effects resulting from a neglect of this rule. Grass will be most effective in avenues when it is flanked on each side by shrubs or trees, and will help to take away from the hard dusty look of too broad an expanse of paving and roadway.

4. *Trellage.*—As a general rule the light appearance of treillage will exclude it from any position near to the large public buildings, and it will be best reserved for parks and open spaces, where it may be used with great advantage in connection with such utilitarian structures as conveniences, shelters, &c. As a background to a garden, in its general lines treillage should take some architectural form, and with it many interesting little alcoves and recesses may be formed.

(b) *Water.*

In addition to the river, lake, or stream, which the site may possess, the possibilities of sheets of artificial water or of playing-fountains should not be overlooked. These may be introduced into all parts of the city, the calm and repose suggested by water being intensified when contrasted with the roar of traffic.

Small streams or rivers passing through the city site, and of themselves too small to be in scale with their surroundings, might well be converted into water canals broad and formal in treatment, their banks affording excellent opportunities for the laying out of strips of pleasure gardens. When such streams or brooks are tributaries of rivers and their banks likely to be used for manufacturing purposes, Wren's scheme for the Fleet Ditch should be borne in mind.

Water as used to decorate cities may be considered under four heads:—(1) Large Sheets and Canals, (2) Ponds of Medium Size, (3) Small Ponds, and (4) Fountains.

1. *Large Sheets and Canals.*—Big sheets of water are well adapted to the plain, and

when large canals or lakes are planned they should definitely become the dominating element in the scheme, any grass plots in size and number being subordinate. With the great formal shapes such as these sheets of water would take, it would be best to avoid a too formal cutting of the surrounding trees; the Château de Chantilly and Versailles with their broad masses of foliage are good examples of the most effective treatment. Vast expanses of water such as these, with their feeling of great breadth, are eminently suitable for the forecourts to palaces or large public buildings. As sculpture in the water would be out of scale and detract from their broad effect, small jets of water only should break the line; and any sculpture should be placed at the ends, where, with architectural details, it may become an integral part of the scheme. The edges of the lakes should be kept low and parapets be avoided; a wide stone curb and an edging of grass will appear more effective and less disturbing to the general sense of breadth.

2. *Ponds of Medium Size.*—As with plots of flowers or grass, the first essential is that ponds shall be of interesting shapes, and so disposed as to harmonise with their surroundings. In a scheme in which both grass plots and water ponds are used, the water ponds will naturally be placed where any special point of emphasis is required, as in the gardens of the Tuileries or the Luxembourg [fig. 2]. Variety can be obtained by sinking the ponds below the general level. Much scope will then be afforded in the treatment of the sides with architectural details and formal planting, and, here as elsewhere, terminal figures might be placed in such positions as to give interesting reflections from prominent view-points. Delightful effects may be obtained by planning long narrow strips of water, the sides closed in by tall trees and the ends terminating in a building or piece of sculpture.

When sheets of water are planned in relation to buildings they should be so placed, both as regards levels and position, as to obtain from suitable points some interesting reflection. The great possibilities of water in conjunction with architecture should not be overlooked: water emerging from the deep shadowy recesses of the sub-structure of a building or terrace, or the walls rising sheer out of some lake or stream, such as Du Cerceau pictured in his ideal Châteaux, give effects worth striving to obtain.

3. *Small Ponds.*—Small ponds of water are of value in giving emphasis to certain points in a park or open place, or at the intersection of avenues having in their centres strips of grass. Such water ponds, when occupying important positions, may often be most effectively combined with architectural features, such as bridges, balustrades, and fountains, as in the Villa Lanti, Bagnaia. The small ponds will also afford excellent opportunities for the exercise of the sculptor's art and for the combination of architectural details with water. Interesting geometrical shapes will be the most effective, and proportion between the surface of grass and of water must always be carefully considered; one or the other must predominate.

4. *Fountains.*—Fountains should not be indiscriminately placed about the town, but rather reserved to accentuate spots of interest, and should be placed either in connection with some building to which their suggestion of life and movement will form a striking contrast, or in some relation to a formal lay-out in the avenue, open space, or park. A small and interestingly shaped basin fed from a fountain in some dark recess round which rise the approaching steps to the entrance of a building, as may be seen in such examples as the Villa Sacchetti [fig. 1, p. 65] or the Capitol, Rome, would greatly increase the importance of the entrance when the principal floor is much above the level of the ground.

In the bringing of the water service to a town, particularly if it be closely surrounded by hills, a water château could be most effective, even if on such a small scale as may be seen at Bourges.

(c) Utilitarian Accessories.

Such features as car shelters and cab ranks have, in this country at least, proved themselves objectionable, not only on account of their bad designs, but chiefly because of their lack of proper positions. Structures of this nature should never be placed at the sides of streets; from the very first in a well-ordered design they should have a proper place assigned to them where they will not detract from, but rather add to, the effect of the avenue and open place. Given a proper position, they might be built of a more permanent material; wooden erections can hardly be in keeping with the dignity of the surroundings.

Lamp standards might more frequently be of stone when in conjunction with buildings. If of metal, both wrought and cast-iron, properly treated, will give satisfactory results; better designs might also be attempted for the standards of the electric-car systems—designs more expressive of the material of which they are made. Lamp standards should be placed to serve some definite purpose in the street or square or on the buildings they illuminate, when, by day and night, they might enhance the effect of the architecture or the lines of the open place; the brilliant effect obtained by a judicious arrangement of lights, following the lines of the plan, may be seen in the Place de la Concorde.

Street name-plates should be uniform in size, of good lettering, and placed at uniform levels. They would be better on lamp standards than on buildings, the varied features of which will naturally prevent uniformity of height always being obtained. These and many other utilitarian objects necessary to the city, if provided for in the first place, even when not objects of beauty, will at least not assert themselves to the detriment of the general effect.

(d) Civic Ornaments.

Civic ornament must be in scale and harmony with its surroundings. Having a definite part in the conception of the whole scheme, it should be used, like ornament on a building, to concentrate upon points of interest, and as in architecture the structural parts are left severely plain, so also civic ornament would be better reserved for less distracting spots than the busier thoroughfares and traffic places.

Civic ornament may be divided into four classes:—(1) Triumphal Arches; (2) Monuments; (3) Statuary; (4) Architectural Details.

1. *Triumphal Arches.*—These should be sparingly used and only in connection with some great wide avenue or bridge; in the first case, either to mark in an imposing manner the beginning of some such avenue, or used at its termination in some open space. Arches may be used in connection with bridges either in the centre or at the ends. They may, especially when used with a small bridge, be of great size, completely dominating the whole and forming a magnificent entrance to a city, or, with larger bridges, they may be smaller in relation and linked by colonnades and other details to the bridge and open space in front. Triumphal arches should be unattached to any building which, of its nature, must be different in scale, and skill is required when using them in juxtaposition to prevent the scale of the latter being destroyed. The arches themselves must be so designed and of such dimensions as to prevent their looking insignificant in comparison with neighbouring buildings or forming an ineffective terminal to a vista. They must be placed with discretion; the Marble Arch can hardly be regarded as an example happy in its position, serving as it does no definite purpose; and they should never be placed to form, seen obliquely, a terminal vista to any important avenue or street.

2. *Monuments.*—Every city will have in the course of time some citizen or incident the people may wish to honour or perpetuate the memory of by some large monument. Such may be largely architectural with sculpture of secondary importance, such as Wren's monument to the Fire or the monuments to the cities of France in the Place de la Concorde; then, as with all

other civic details, situation is of primary importance. They may be set in the centre of some large open place, such as Napoleon's column in the Place Vendôme; and when in direct relation to a building or group of buildings they must accord in bulk, shape, and detail with their architectural surroundings. They may be placed to form terminal vistas to the avenues or within the parks, in both of which cases the immediate surroundings should be formal and architectural in treatment, a link between the monument and the trees and gardens around. The importance of the monument may be increased by the addition of colonnades, large flights of steps, water basins or statuary, when it may become the *raison d'être* of a surrounding open square.

3. *Statuary*.—The use of sculptural detail should not be to mark the absence of any architectural idea but rather to accentuate one, and if sculpture be used with buildings, as it should, then to have its full value in any scheme it must be thought out from the very first in relation to the architecture it is to adorn. Statuary may be used most effectively in conjunction with buildings in such positions as flanking flights of steps, when its light and more fanciful touches will contrast well with the more formal building. Detached groups of sculpture completing the scheme of the building itself will have the value of linking the architecture with the open spaces and streets in front. The details of isolated groups of sculpture should always be designed to blend with the architectural character of the neighbourhood, and when placed in conjunction with some building, the details should be considered with those of the building itself. "Realistic" statuary would be best reserved for parks and gardens away from the buildings, while monuments with much movement and grouping of figures may be "steadied" by an architectural canopy. The beauty of statuary in combination with foliage must not be forgotten, but figures should not alternate with vases—such a plan only results in the scale of each being destroyed. The subject of the sculptural decoration of buildings might well be the history and industries of the town, and so help to portray its individuality.

4. *Architectural Details*.—These include such objects as seats, steps, vases, and other civic furnishings, all of which must take their place as units in the whole scheme, not asserting themselves, but helping to attain the general effect. Decorative paintings, iron, bronze, marble, and many other materials and crafts might be used to adorn the city and give colour to a usually too sombre appearance. Finally, every little detail requires careful consideration, for interest in the town's design must be maintained to the least accessory. A baluster ugly in contour may mar the effect of a whole terrace. As Sir William Chambers said, speaking of mouldings, the whole can be spoilt by bad details, just as a fine musical composition may be murdered by a group of village fiddlers.

In the realisation of a fine conception, by a steadfast adherence to a great ideal and a rejection of all that is unessential the city should have, as Wren said of buildings, at least "the attribute of eternal."



STYLE.

By PERCY S. WORTHINGTON, M.A. Oxon. [F.].

Read before the Northern Architectural Association.

IN trying to put together some disjointed thoughts on the subject of style, it was not in my mind to particularise on historical developments in architecture, nor on the æsthetic appeal of this or the other style as we use the word to differentiate the many compartments into which we are accustomed to divide the building works of man, but rather to inquire into the abstract meaning of the term. As we shall consider it, therefore, style is confined to no particular type of architecture, but is a common factor in all great work instinctively felt but, owing to its elusiveness, extremely difficult of any sort of accurate definition.

What shall we say is the supreme gift of the architect? Is it constructive power? Is it academic knowledge? Is it the sense of fine proportion or largeness of conception? Or is it elegance and delicacy of treatment, or splendour of imagination?

I should say that it is none of these individually, though each in itself may make a building noteworthy. There must be some power that marshals all these in their order and place, and takes command of all the resources at the architect's disposal as a general handles his troops.

Is there any word that sums up the finishing grace, power, and completeness common to the masterpieces of Greece, Rome, the Middle Ages, and the modern world more accurately than the word "Style"? Is it not the one common controlling idea that runs through the work of all ages in architecture, literature, painting, sculpture—all the arts?

We speak of the style of any period or any master: but in this sense the word is generic. It may be used to classify bad as well as good design, clumsy as well as fine work; buildings before which we should never tire, others to be passed by without a second glance: we are dating rather than criticising. Style in the abstract is an almost indefinable quality. Distinction is perhaps the term that comes nearer to it than any other, but distinction does not convey to me all that I understand to be implied by style. Does it, for instance, necessarily imply knowledge? Yet style is hardly recognisable without knowledge, just as it is impossible to an artist without knowledge. A work too may have "distinction" and yet not be intellectual. Style appears to me to imply intellect.

It is conceivable, though so far as I am aware it has never happened, that some great genius might arise independent of all tradition and all knowledge whose work would possess the quality of style. There have been, and still arise, schools of painting that have made a boast of throwing tradition to the winds, of forgetting past training and starting afresh. Have such experiments succeeded, to begin with? And interesting as they may be, have not the results been rather mannerism than style? And mannerism is the antithesis of style. But even to mannered work we might sometimes concede distinction.

If architectural style may be learnt or taught at all, it can only come by patient training and the study of the *principles* of great architecture—principles which apply to small work as well as great; to a piece of furniture as well as to monumental architecture, each in their different degree and each echoing the meaning of their age. Great style is always direct because it is intellectually clear.

There is something, call it as you will an art or a faculty, which, when you come to deal with men who do things, makes itself felt as essentially the art or faculty of expression—individual expression which betrays the personality of the doer.

Take literature. Terse, vigorous prose shows the man of action, perhaps of dominating character; polished prose the scholar; grandiloquent, pompous phrases the writer whose judgment is subordinated to his vanity of expression. But no style is beautiful unless the mere words and sentences have charm of their own as a presentment of their matter. To the man whose Greek is rusty and to whom, from long disuse, ready comprehension of Homer is not so easy as it once was, the long rise and fall of the hexameter is still in itself magnificent music, just as great vocal music enthral the senses, though the words may be unintelligible. This beauty of rhythm and harmony is a marked attribute of style, literary or artistic.

Take on the other hand a writer who has not the gift of fine expression. He has a personality which may well appear in his work, but style, as we understand it, will not be there. The character and extent of his knowledge and the value of the judgments based upon it will be the evidence of his personality. While knowledge, judgment, and expression go to the making of an artistic whole, expression determines the final form in which the work will be presented, and, while want of style limits artistic value, its possession confers a controlling force.

Architecture, like painting and sculpture, makes appeal through the eye to the intellect, and this appeal is most strongly felt in those types of building where we most readily recognise style. I need scarcely support this by reference to Greek architecture, especially to that of an epoch in the history of Athens during which the refinements of æsthetic construction arose from, and reacted upon, an extraordinary intellectual people.

I should then suggest that style in architecture is the result of the embodiment of knowledge and judgment in a fine and distinctive form of expression, that it is the means by which nationality and personality are expressed, that it is pre-eminently the mistress of architecture, and add that it is an intellectual gift, and as such may hardly be learned or imparted.

A stylist in architecture is like a man conducting his own music, drawing out of each part of his orchestra its contribution towards the unified effect and giving to the whole his personal interpretation.

Sir Walter Raleigh in his essay on style maintains that literary style cannot be taught. He says: "Imitation of the masters or of some chosen master and the constant purging of language by a severe criticism have their uses not to be belittled; they have also their dangers. The greater part of what is called the teaching of style must always be negative, bad habits may be broken down, old malpractices prohibited. The pillory and the stocks are hardly educational agents, but they make it easier for honest men to enjoy their own."

But literature, in common with painting and sculpture, parts company with architecture

at the point of completion. It is not difficult to get rid of a book or a picture or of most sculpture, but it requires movement of heaven and hell to get rid of a bad building, and a crooked ill-visaged face may grin down on generations of passers-by provided it is strongly enough built and brings in an adequate rental. Indeed the removals of which we have to complain are those of the more precious part of our inheritance. Surely fine style in our streets is something we can ill afford to part with. Dignity and beauty are not things that should be lightly cast aside, even supposing that we can replace them with something more dignified and more beautiful, which is generally not the case. It seems impossible to gain public or private sympathy for a fine building if its destruction will put something into somebody's pocket, but a proposal lately made to exempt buildings or places of intrinsic beauty, as well as of historic interest, from taxation on condition that they are scheduled as national monuments, appears to me a happy one, combining as it does an appeal to the pocket as well as to æsthetics.

Granted that style—even let us modify it by saying style at its highest—cannot be learned, and that it is an intellectual equipment which no teaching can supply, the situation is not so entirely hopeless. While really great architecture is naturally rare, and possibly the proportionate output of poor and actually vicious work may not have materially decreased, there appears to be hope in the fact that a large body of work is based on a broader appreciation of style, rather than on picturesque and accidental motives. Among Americans this is very markedly so. There is something nationally great and distinctive in their better work, and in their libraries, banks, stations, and public buildings generally there is a strong and remarkable feeling for style.

The time is not so long past since the enthusiastic Romantic paid his visit to Italy or France and brought back to England the notion that English architecture was negligible and that its traditions must be scrapped and those of the countries of his sketch-book substituted. This led to the anomaly of modern planning and mediæval design, and English interpretations often lacked any sense of style or any intellectual control; and the curious part of it all was that men whose studies show a fine appreciation of style and a natural instinct for scholarly and noble design that would have raised instead of revolutionising the traditions of good civic architecture in this country were competing with one another in foreign Gothic at variance with all modern requirements because assessors felt that the public would have nothing else.

The style of a period or a building is to be found in its essential method of expression, and that expression must be intellectual and, whether the building is small or great, it must be treated in a large manner.

Take two buildings differing so widely as the Palazzo Massimi and Santa Sophia. Peruzzi is one of the great masters in style, though he never produced work on the largest scale. Yet his manner was always grand. Fine as his plan for St. Peter's was, circumstances of character and environment stood in the way of its accomplishment, but the Massimi will remain for architects and art-lovers the embodiment of an individual and very beautiful style both in plan and elevations. Quatremère de Quincy in writing of it says: "*L'espace est étroit et petit. Tout ce qu'il le remplit est grand et y paraît à l'aise.*" By a masterly plan he created on a cramped site a finely ordered and largely conceived group, though only of moderate size, and upon this foundation raised exquisitely proportioned and detailed superstructures.

Turn now to Santa Sophia, a building of the opposite scale. Let me read you what Mr. Lisle March Phillipps says, since his criticism seems to me sane and comprehending, and one expressing clearly the view of style which I wish to emphasise:

"There are traits in architecture which are vital and which constitute the style of a building, and others which are more or less accidental and interchangeable and do not constitute style. It seems to me that no disinterested critic who has submitted himself to the influence of Santa Sophia, and has considered its relations

with the Roman architecture that led up to it, can be in much doubt as to what the *style* in it consists in. It does not consist in such decorative additions as the use of mosaics and marble panelling: for such decoration might all be stripped from the church, as indeed to a large extent it has been, without in the least affecting the character of the architecture. Nor does it even consist in the use of certain structural forms, as the dome and apse and vault, though these of course are more essential, for all these, as we have seen, were used in many Roman buildings and used even in conjunction with marble panelling and mosaics. All the features, structural and decorative, employed in Santa Sophia had already often been combined, and yet their combination had not resulted in a structure more than remotely resembling Santa Sophia in character. It is not then these things that compose the style of the Greek Church. Enumerate every feature here present, and you are no nearer a satisfactory definition. They will every one be found in the Baths of Caracalla. But if from structural features you turn to structural principles: if, instead of saying that dome, apse, and vault are here present, you say the whole building is conceived as an exposition of the arch principle, then indeed you name that which really gives character and style to the church, the essential trait in it on a participation in which any claim of real relationship betwixt it and other buildings must be based. . . .

Santa Sophia, developing a great structural principle in broad daylight with unexampled logic and daring, addresses itself entirely to the intellect. St. Mark's, sensuous and contemplative, with its dark splendour of colouring, half seen, half guessed, in the rich obscurity of its vaults, addresses itself entirely to the emotions. It is impossible to bring two such buildings to terms with each other of any kind, and to pretend that they both belong to the same style is to deprive the word style of any comprehensible meaning. . . .

To conclude then, what I would suggest to the reader as the really significant quality in Santa Sophia is the exposition it gives of the nature of the arch as a structural principle. This is the "essential" trait in it, that which represents the intention of the architect and gives *style* to his work, and in comparison with this all other features are of superficial and negligible importance.—(*Works of Man*, pp. 140-4.)

You will excuse my quoting thus at length, but this passage seems to me to sum up the essence of style. It emphasises three things. First, the necessity for seeking principles not accidents; secondly, the necessity for intellectual control permeating a building and assembling its parts in one unified whole constructionally and artistically; thirdly, the difference of appeal between the Classic tradition and the mediæval. Though the emotional appeal of Gothic architecture differentiates it from the intellectual appeal of Classic, the exposition of the arch as a structural principle is more clearly seen in Gothic art, and we shall probably hardly agree with those who hold that the intellectual appeal is wholly absent from Gothic or the emotional from Classic. All the same the distinction is a true one in the main because the predominating classical feeling is intellectual and the predominating Gothic emotional.

Nations work in schools, and as opinions and ideas crystallise to a point, and unity of aim backs them, they are expressed in the architecture of the time and a style is evolved. Within this school there is an inner circle of the initiated who possess the gift of style in the abstract whose work is destined to remain as the highest exposition of style within the style. The general characteristics laid down by such men, and imitated by their inferiors in intellect, run on and gradually change with changing ideas and circumstances until some definite modification denotes the advent of another phase. The leaders show, with more or less intensity and strength, the governing powers of a single motive and a sense of scale which is felt all through their work, shaping itself out to the last touch in all kinds of manifestations, decorative as well as structural, and so producing throughout the whole a uniform sense of agreement and harmony which is style.

Quot homines tot sententiæ. Every man, if he thinks at all, has his own method of expression, good, bad, or indifferent. The good only has ideal style, and for posterity it is the few that matter. Given the same data and conditions, two modern men will produce entirely different work. One will give you a Gothic, another a Classic solution of the problem; or given two Classic designs, each will differ in his adaptation of the classic spirit. We may go further and say that if a number of architects were given identically the same plan for which to design a façade, and it was conditioned that height and breadth, positions of entrances and windows, and subdivision into floors and bays, were the same, the treatments would still be different, and the

mind, hand, and eye of each could be clearly discerned in his finished work. Yet style might mark each design and it would be the intellectual and controlling faculty which would differentiate between them.

But the controlling spirit voices not only the character and mind of the designer. It certainly expresses the general environment which influences his mind, and indeed no work can be fairly judged until that is understood, but it may express also the character and mind of a particular person whom we call the client, if that person has any individuality at all. A building is often the interpretation of one mind by another, and in this way, sometimes, a prevailing distinction is conveyed.

The Petit Trianon is to my mind, perhaps quite imaginatively, a typical instance in point. Compare it with the Grand Trianon. The two are entirely dissimilar. Both reflect the phase of design prevalent in their time; but it is not so much this difference of a century that stamps itself on the mind, as the difference between the spirit of Mansart's house for Louis XIV. and that of Gabriel's intended as a home for Madame du Barry. The Petit Trianon is a gem of delicate refinement, the epitome of an age the style of which socially and artistically was pre-eminently frivolous, and yet with all its delicacy it is the acme of the mason's art in a country where the mason and his material were supreme—*οὐδὲν ἄγαν*, nothing too much—and nothing too little. It is bold enough to have no suspicion of weakness, no predominant note of frivolity, without a false note or false quantity, and while showing the controlling hand of the designer has all the charm of an ideal woman's home.

The truest test of style is, if I may so express it, inevitability. What you see before you is inevitably right; nothing requires to be added and nothing detracted. It is a complete and satisfying whole. There may be many treatments of the same subject which will possess style, and if so none of them will disappoint the critic.

Style deals with apparent as well as actual necessities. There is nothing more satisfying than a fine Doric temple: yet scientifically the columns are quite disproportionate to the load they have to carry, and the pleasure is none the less because we are conscious that this is so, since we also feel that a developed sense of style derived from an æsthetic appeal to the intellect has reduced this type of building to its simplest and most intellectual form.

Now it may seem a paradox to say that what in less skilled hands would be a blemish, may be in the greater hands of the true stylist not only condoned, but may even count for merit. The stylist may do things with distinction which a smaller man would with wisdom avoid. Let me quote Raleigh again on literary style: "Style," he says, "even revokes, on occasion, the rigid laws of grammar or countenances offences against them."

So style in architecture may disregard the rules which bind with the laws of the Medes and Persians the purely academic designer. One may cite as an example the treatment of the portico of the Pazzi Chapel by Brunelleschi. The unconventional arrangement of the arch and screen above the order has its critics. No doubt in less able hands the upper part must inevitably have appeared detached in treatment from the lower, wanting in unity, and yet the master has come out of it triumphantly.

We were taught to think that the Greek designer worked within absolute rules, and the rules we learnt are the ascertained proportions of selected examples. These are the finished products of a picked period, of an age intensely intellectual, intensely sensitive to the eye's appeal to the intellect, and it is well that we should base our training upon them, for mastery of the Parthenic principles leads in itself to the thing we call style. But the very character of the refinements themselves are proof that they were not in their origin merely mechanical, that their appeal to the intellect was directly through the highly trained sense of sight and the culminating point of experiment after experiment.

Russell Sturgis says: "The important matter of spacing of columns, especially in the

exterior colonnade, is treated in many costly books which set forth the Grecian and Greco-Roman orders with all the columnar architecture that has resulted from their study. It is probable that the Greek architect of a good time considered in every case his own preferences, thought out his design in this and other respects, drew and modelled in plan and also in vertical display his future building, and left his measuring until he had satisfied his eye and his spirit with his proportion. . . . It is customary to speak of it—(i.e. the height of the entablature as one of many details)—in archaeological descriptions as representing a given fraction of the total height of the column in the same building, but it is most unlikely that the Greek thought of it in that way. He was bound by a rule, whose strictness we can hardly imagine as applying to us in modern times, but that rule left him free to vary the height of his stylobate and his frieze and to vary the total height of his entablature even as it allowed him to space his columns more or less widely."

Had style so hardened that this was not the case, surely there was an end of all style—of all art whatever: from an intellectual, architecture would have developed into a mechanical process, a misfortune which has happened too often among us and others before our time by reason of failure to master principles within whose sanction freedom is allowed.

And apart from reasons of date and locality, the very variety of beautiful Greek types of which we have knowledge, proves that the personal equation entered largely into their origin and that the sense of style depended upon this as well as upon common and acknowledged rules of treatment. Compare the Sicilian Doric temples with the Parthenon. Differing though they do, the temple at Segesta is quite as impressive as the Parthenon itself. The idea fostered by cramming for examinations is that certain types were universal, and that Greek ornament, though perfect in form and modelling, was very limited in its range. That this was not so is however certain. I suppose that no two temples were the same in proportion, intercolumniation, or detail, and that the best work was never stereotyped is abundantly plain from even the comparatively small number of examples which may be found collected in the British Museum and other European galleries.

The temples at Bassae, Diana at Ephesus, Zeus at Girgenti, even the Erechtheum itself, are all individual departures from the normal as we conceive it.

Discarding archaeology, accidents, and emotion, as having no essential connection with style, the study of Greek principles seems to me to afford us the greatest chance of becoming true stylists and true humanists, for the two go together. The philosophy of the Greeks embodies both. They held that beauty had an ethical significance, that the production of a beautiful thing signified a beautiful mind behind it. "Beauty implied morality governing the whole life of the citizen, and training was to fit men not with facts but for the exercise of thought. The acquisition of knowledge was not an end in itself, but a means to the end, and breadth of view, calmness, completeness, and lucidity, were as characteristic of their architectural style as of their philosophy."

Style must to my mind be studied for educational purposes primarily in Greek architecture, and subsequently in those periods of intellectual revival which occurred from time to time.

Let us consider for a moment our present position and what the periods are of which I speak. We must admit, I think, that, with noticeable exceptions, English architecture had sunk into lifelessness and dulness at the end of the eighteenth and beginning of the nineteenth centuries. This was not the fault of architects *qua* architects, but of architects *qua* men—men representing the outlook of their time. Then came an immense stride in national development. A more broadly educated public were ready to receive new impressions and to revolt against the dulness of homes and surroundings, literature and art. A youthful and romantic revival took place, reseeking inspiration from the Middle Ages, and with that inspira-

tion it adopted the emotional basis. It was a curious coincidence that this revolt in art matters, led by John Ruskin, came at a time when a really fine Classic tradition seemed to be establishing itself in England, for St. George's Hall, Liverpool, was not finished until 1854, and Barry and others were inaugurating almost a new era in Renaissance work of a fine and scholarly type. And we shall now, I hope, take up again the trend of their work.

Now Gothic architecture was the evidence of the overwhelming of previous civilisation, and was a complete reversal of outlook upon life, overthrowing outworn creeds and performance, replacing a civilization of ideas with one of intellectual dependence, action, energy, and emotion, which dominated Europe throughout the Middle Ages and finally fell before the inevitable resurrection of intellectual independence.

While it is not possible to draw a distinct line and say of one phase of architecture that it is entirely intellectual, of another that it is entirely emotional, we must recognise, as we have said before, that the Classic spirit stands mainly for the one and the Gothic for the other. Emotion has been denied to the Greeks and intellect to Gothic builders. We can hardly take this view. The interior, at any rate, of a Greek temple must have had very strong emotional significance in its lighting and colour and its great statue of rich workmanship framed by the luminous marble of the great opening. And did not the sculpture on the exterior appeal to the emotions, not through its method of presentment, but through reverence for the gods and heroes or through civic or national pride?

And are not the mysteries themselves, and the references to them in Greek writers, clear evidence that emotion played an important part in the ritual of the Greeks? Moreover why, if this was not the case, did the city of Athens take such pains to obtain control over the Eleusinian mysteries unless she coveted the prestige and support of a force with large emotional hold upon the people?

Turn next to the Augustan age. This, as the Periclean, represents a great era of thought and ideas shown in its literature and its art. It was an intellectual age, and its architecture, less markedly in design but pre-eminently in plan, shows the great characteristics of style.

Next came the Hellenistic age at Constantinople with Santa Sophia as its culminating point, and next we find ourselves in Florence in the fifteenth century, and ask ourselves what sort of an outlook literature and art take. In it again is seen a return to the Hellenic spirit and classical manner, but with an entirely individual development. Things are not seen through the eyes of the Greek or Roman, but through those of the Florentine and Italian. Art is pre-eminently the offspring of the life and environment of the time. Italy had never really lost its Classic and Pagan atmosphere, and the horizontal feeling had always been strong. Emotion aroused by the northern vaults with their soaring lines carried constructionally to the highest point in spreading ribs, the marvel of poise and counterpoise in arch and vault, the mystery of broken masses and vistas were qualities almost unfelt in Italian Gothic. So the Italians came by their own again, and Brunelleschi led them. He was the first to assert his position as a modern architect, to respond to the intellectual movement of his time and the influence of Lorenzo's Academy, and he inaugurated a new departure in architecture which, except for occasional lapses, has superseded, and still seems likely to supersede, the principles of the Middle Ages. He was followed by a band of highly intellectual men who, while they represented and built for their time and possessed strongly individual sense of style, worked within marked lines of local and national thought.

Once more in the seventeenth and eighteenth centuries came a period of intellectual activity, this time in France. She had been slow to cast off her Gothic garment and clung to it, trying to mend its threadbare folds with doubtful patches of the new cloth. Then her intellect cleared itself, and she gave us a period instinct with style, with a certainty and grasp that has influenced the whole of Northern Europe and America.

I feel that the trend of architectural history drives us to the conclusion that the abstract study of style must be sought in these culminating periods which are more akin to modern thought than are the Middle Ages with all their beauty, and that its principles will almost of necessity be found in them. Of these periods we shall probably all admit that Greek architecture will yield most and that the mastery of its principles will stand us in best stead whatever phase of tradition we may elect to follow—for we are the heirs to the whole past—or whatever revolution we may contemplate. Style must in any case remain mistress of the field. But wherever our study and analysis take us, we must remember that we are Englishmen, and that while art and style are universal their manifestations cannot rightly be anything but national until universality in character, habits, and climatic conditions has been so established that the Englishman, the Frenchman, the German, and the Italian all think on the same lines, speak the same language, and live in the same way. Such a consummation can hardly be expected or desired.

For principles, therefore, we must not turn to accidents of time or country—not to the study of Periclean buildings because we want to build temples, nor to fifteenth-century Florence because anyone nowadays wants a Riccardi or Strozzi palace, but because we are in search of something pre-eminently beautiful whose character we can analyse intellectually, and I think that if we can master the principles of the Parthenon, the Forum of Trajan, the Massimi or the Petit Trianon, we shall have done something towards a knowledge of style. To what extent we can use that knowledge depends on a higher and rarer quality.

The Bishop of Lincoln, in an address lately given to the Classical Association upon Hellenism as a force in history, said :

If I have eyes to see, I perceive Hellenism a pervasive force in the English society of the hour. Their ethics resemble the best side of old Epicureanism—pleasant, self-controlled, lightly sceptical, very sensitive to the appeal of fitness and good taste. What could be more Hellenic? I could wish sometimes that our art, in music perhaps, in architecture certainly, as well as in painting and poetry, had more care for those old Greek virtues of beauty, of rhythm, and of those untranslatable qualities *μέτρον* and *αἰδώς*.

If this tendency observed by the bishop is abroad and becomes anything more than a temporary vogue, it will be well for our art, and one hopes to see more and more the casting off of slovenliness and the taking on of larger and more scholarly methods of design.

And yet our own time differs essentially from every age that has preceded it in the complexity of the problems which it presents, and this difference must of course leave its distinguishing mark upon our architecture.

The conditions of our city architecture, with its intricacy of planning and temptations to insincere construction, its shop-fronts, its combinations of purposes, and cramping grandmotherly legislation, together with great facilities for locomotion and the command of all the materials of the world, differs essentially from those with which our forefathers had to deal. In comparatively recent times a town was a collection of dwelling-houses together with the public buildings required for communal life, churches, market and guild hall, rare places of public entertainment, and the hostels. For the most part the business of the citizens was carried on in their own homes, and suburban life was unknown. It is within living memory that the dangers of a night journey to Kensington or Hampstead were not to be despised, and an armed escort was necessary to ensure safety in going to and returning from a rout beyond the limits of the town.

You have, therefore, not to go back so very far to a time when few people could live away from their work and there was no marked difference between domestic, commercial, and other types of building and no complications of purpose or construction to upset the even tenor of external design.

Moreover, there was the advantage of fixed traditions and a regularity and certain largeness in planning, and an architect had not to scratch his head and determine whether his house should be Greek, Roman, or Chinese, or fit his plan and fenestration to a French or Venetian Gothic façade and the exigencies of his arbitrary choice.

The finest buildings, as we know, are those which reduce complexity to simple and well-balanced lines in plan and design with clear and intelligible purpose running through them. Such buildings have style, and the task of this generation appears to be to obtain control over the chaos and complexity of modern conditions, and to cultivate the power of thinking on clear direct lines.

To hold that a sense of style is an intellectual endowment and therefore not to be taught is not such a hopeless case as it might seem at first sight, for architects have their share of intellectual gifts with any other class of men; but until an architect has equipped himself in such a way as to play at will with the harmonies of his art he cannot hope to exercise the supreme finish of style, and he may be destined never to discover such power within himself.

Sooner or later most men realise that nature has been niggardly in her gifts, sadly acquiesce in the inevitable, and console themselves with working and enjoying the work of others up to their own point of intellectual comprehension, while they envy and admire the more fortunate who are able to go forward to the greater and more inspiring enjoyment of their art and to the production of work in which future generations will recognise the style of genius.

And all have this consolation, that no man is debarred from the acquisition of good taste, which, as a humanising and selective guide, will raise his work to a level that will not disgrace him or his generation. The difficulty in so many cases is to give a start on the right road and to fire ambition.

For the intelligent and enthusiastic student there is always bright hope. Neither he nor another can tell what discoveries he may make in himself; and, at any rate, if he be destined to the same disappointment as many thousands that have gone before him and he falls short of his highest ideals, let it not be due to his own fault, but to inevitable limitations that no fighting spirit can overcome.

A passage from Arnold Bennett's *Feast of St. Friend*, probably familiar, puts the point so finely that I cannot help recalling it to your memory in conclusion:

There are those who say, "At any rate we might moderate somewhat the splendour of our ideal and the audacity of our self-conceit so that there should be a less disparity between the aim and the achievement. Surely such moderation would be more in accord with common sense! Surely it would lessen the spiritual fatigue and disappointment caused by sterile endeavour!" It would. But just try to moderate the ideal and the self-conceit and you will find, in spite of all your sad experiences, that you cannot. If there is the stuff of a man in you, you simply cannot! The truth is that, in the supreme things, a man does not act under the rules of earthly common sense. He transcends them, because there is a quality in him which compels him to do so. Common sense may persuade him to attempt to keep down the ideal, and self-conceit may pretend to agree. But all the time, self-conceit will be whispering, "I can go one better than that!" and lo! the ideal is furtively raised again.

A man has little scientific control over the height of his ideal and the intensity of his belief in himself. He is born with them, as he is born with a certain pulse and a certain reflex action. He can neglect the ideal, so that it almost dissolves, but he cannot change its height. He can maintain his belief in himself by persistent abandonment to folly, but he cannot lower its flames by an effort of the will, as he might lower the flame of a gas by a calculated turn of the hand. In the secret and inmost constitution of humanity it is ordained that the disparity between the aim and the achievement shall seem grotesque; it is ordained that there shall be an enormous foss about pretty nearly nothing; it is ordained that the mountain shall bring forth a mouse. But it is also ordained that men shall go blithely on just the same, ignoring in practice the ridiculousness which they admit in theory, and drawing renewed hope and conceit from some magic, exhaustless source.

So generations of architects will arise and struggle on in spite of disappointment, but in each succeeding generation may there be more and more to show the higher qualities of the art, and, chief of all, a masterly and controlling style.

REVIEWS.

COUNTRY GARDENS.

Gardens for Small Country Houses. By Gertrude Jekyll and Lawrence Weaver. 4s. Lond. 1912. 15s. net. ["Country Life," 20 Tavistock Street, Covent Garden.]

In the avalanche of books that have appeared, and are still appearing, on every subject connected with gardening and the garden, it is a pleasure to find one from which some real solid nourishment can be derived by the architect. There could not be a better-equipped team for the production of a book on Gardens for Small Country Houses than Miss Gertrude Jekyll and Mr. Lawrence Weaver. The task has evidently been a sympathetic one to both authors, and they have garnered a great amount of useful information, the result of ripe experience and thought.

In these days when so much is heard of women's sphere, and we are told how handicapped they are in various directions, it is interesting to consider how immense, how beneficent, how far-reaching has been the influence of one woman—living quietly in the country, far from the maddening crowd—on an art the most primitive, but which at the same time requires the most sensitive feeling and the widest knowledge! On the matters treated of in this book, who is better able to speak than Miss Jekyll, who has created for her own use a house and small demesne perfect of their kind, and into which some illusive, intangible quality, some absolute enchantment seems to have been woven?

All the elements out of which the design of gardens—excepting those in the "grand manner"—is evolved are discussed chapter by chapter in a manner that is useful and suggestive. No good purpose would be served by doing more than drawing attention to the rich store of suggestions, both practical and æsthetic, that abound. For these the book must be studied; only a few of the more important are referred to here.

The garden at Millmead Bramley, described early in the book, is a veritable triumph in its demonstration of what can be done on a narrow strip of sloping ground in the course of a few years with knowledge, taste, and—rarest of all gifts—imagination.

Let those who have been guilty of erecting aimless little structures, made of flimsy sawn and painted lath—the trash that it is fashionable to call "treillage"—let them digest the chapter on Pergolas; and note especially that no garden should contain a pergola unless it can be contrived to lead definitely from somewhere to somewhere, and that as a rule it should be a solid structure fit to last for generations.

A particularly useful type of illustration is that on page 50, showing a treatment that has been greatly developed, one might almost say invented, by Miss Jekyll. It is curious, though the villa

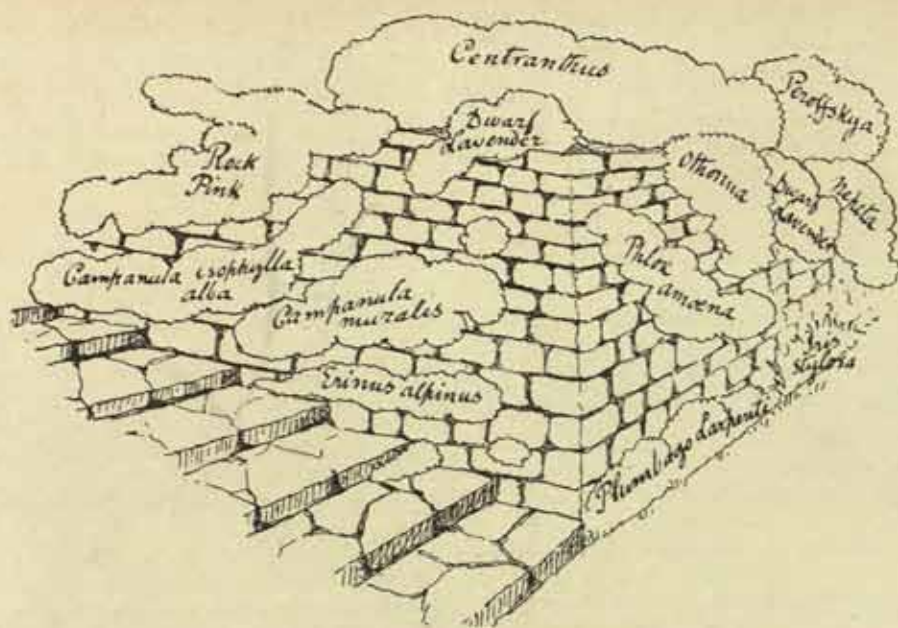
rockery as a rule is such an absolutely poisonous horror, that a dry wall skilfully planted can be one of the most delightful things conceivable. A photograph of a typical example is given on the page referred to, and above it a diagram giving the names of the various plants illustrated in the photograph (reproduced on p. 143 opposite).

This is the place to note that the planting plans for borders and the like devised by Miss Jekyll and reproduced in these pages are of extraordinary value. It must be admitted that it is in the problems of planting that the architect who finds himself mixed up with garden design gets stumped. He may have a few stray glimmerings regarding the arrangement of terrace steps, he feels that a wall is a better thing than a turf bank, but when it comes to planting—like the old Scotch gardener "he gets fair wandered among a' the names."

Many a comforting reflection can be gathered from these pages, and one is—that to have real charm a garden does not need either to be old or to be large. For as Miss Jekyll somewhere says—discussing the question of large *versus* small gardens—far more important than the area of the ground is the size of the owner's heart, and brain, and goodwill. After all, when you sit down to think what places live in the memory as having given the most real pleasure, is it not almost always those of moderate size, where the owner is intimately in touch with all that goes on? How often in the "great" places, after meandering through the shrubbery of specimen conifers and monkey puzzles, and thence through acres of weariness and endless glass-houses in the garden, you are at last led into some enclosed bird-haunted corner, some little "chamber roofed by heaven"—probably the only survival of an earlier and simpler scheme—where it is possible at last to sit down and breathe and think, and which alone has the intimate personal touch that makes any form of art worth while.

In a volume of this type it is sometimes somewhat difficult to disentangle the work of the two authors; but in the book under review, any one familiar with the outlook and literary methods of the joint authors can trace more or less which portions of the book they are responsible for. Judged by these tests it is obvious that Mr. Weaver has written the informing and stimulating chapters dealing with the more markedly architectural elements of the garden, such as: Steps and Stairways; Garden Houses; Walls and Balustrades; Seats and Sundials, &c.

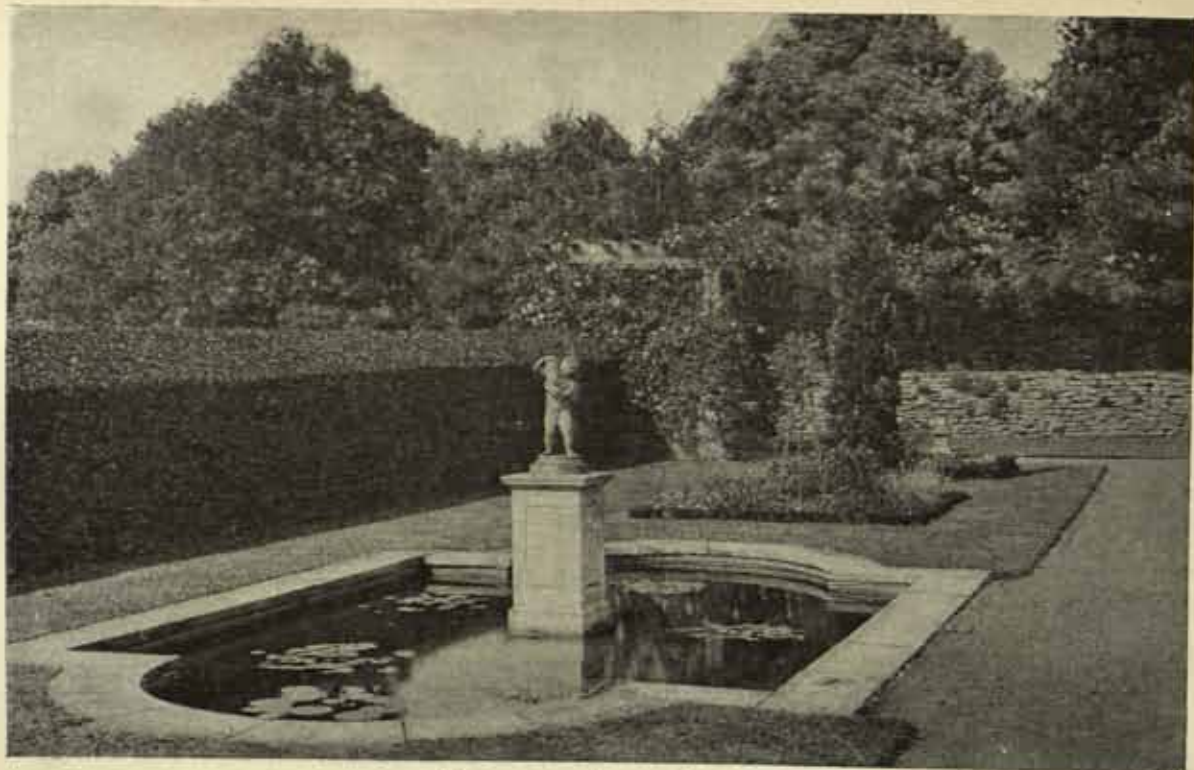
Out of many chapters two that stand out as especially fresh are those that deal with the treatment of small sites, and water in the formal garden. Probably the majority of architects will be astonished to find how many and how varied are the opportunities, suggested by the examples illustrated, for the decorative use of water even in the smallest garden.



Sketch of Planting in Wall illustrated below



PLANTED WALL, HIGHMOUNT, GUILDFORD.
From Gardens for Small Country Houses.



WATER IN THE FORMAL GARDEN.



STEPPED APPROACH TO PERGOLA.

From Gardens for Small Country Houses.



WATER IN THE FORMAL GARDEN.



A TWO-YEAR-OLD GARDEN.

From Gardens for Small Country Houses.

In the golden days of architecture no one who designed a house was content to surrender into other hands the devising of the architectural lines of its garden setting. A study of this book, and the examples which appear week by week in *Country Life*, will equip the architect to claim once more his rightful function to co-ordinate house and garden so that both together may be in tune, may show a rhythmical unity of conception. For this reason we may be grateful to Miss Gertrude Jekyll and Mr. Lawrence Weaver, not forgetting also Mr. Raymond Negus, whose chapter on Rock Gardens makes an admirable postscript to the book.

ROBERT LORIMER, A.R.S.A. [F.].

Edinburgh.

PYRAMID TO SKYSCRAPER.

A Short Critical History of Architecture. By H. Heathcote Statham. La. cr. 8o. Lond. 1912. 10s. net. [B. T. Batsford, 94 High Holborn, W.C.]

One is frequently asked to recommend a book dealing with the history of architecture in a manner suitable for the amateur or for the student who is taking his first course of lectures on architectural development. For such people little provision has been made, most of the well-known books being planned too much in the "grand manner" or partaking too much of the nature of catalogues; so there is distinctly room for such a publication as *A Short Critical History of Architecture*. When Mr. Batsford publishes a book one feels practically sure that it will be safe to purchase it, and the subject of architectural criticism could hardly be in better hands than those of Mr. Statham.

In 1895 Mr. Statham published his interesting *Architecture for General Readers*. The first half of this deals with architectural principles, and the second half, the historical sketch, consisting of only about 120 pages, is necessarily much slighter than the present *Critical History*. Mr. Statham also compiled the article on Modern Architecture in the recent issue of the *Encyclopædia Britannica*, another excellent exercise in the art of putting a technical subject before lay readers. In *Modern Architecture* and in his work for the *Builder*, Mr. Statham has shown his ability in dealing with architectural criticism.

Now it is extremely important that the people who are likely to buy Mr. Statham's latest book—the amateur and the young student—should have the subject presented to them in the right way. In the larger books this is less important, because those who read them are, generally speaking, more advanced students who have acquired the habit of reading in a critical spirit. But the first book one reads on a subject—and this book is destined to be the first book on architecture read by many a student—creates a lasting impression. Some students, in fact, never recover from their first book, but go through life in the fond belief that

what they gathered from it is the sum of human knowledge on the subject. So we see that Mr. Statham has put himself in a position of great responsibility; and in order to judge how he has discharged it, it may perhaps be well to postulate a few of the principles which should govern the production of such a book.

1. It should not be dogmatic on matters of opinion.

2. It should make clear that architecture is, to a great extent, a matter of gradual development.

3. It should emphasise the importance of construction, of the proper use of materials, and of suitability to environment and purpose.

4. While it should draw attention to the fact that architecture is a matter of small buildings as well as of large ones, the world's great buildings should be made to stand out in proper perspective.

5. It should lead to further study.

The book emerges from an examination conducted on the above lines very satisfactorily. The first point is one of great importance, as there is a tendency at present to teach architecture in a dogmatic manner—a method which doubtless gives good apparent results during the first few years of a student's career, but which does not give his mind that breadth which is so valuable in dealing with architectural problems in after life. Mr. Statham's comparison of English and French Gothic is an excellent example of the fair treatment of a debatable subject. In dealing with the rise of the Doric order, however, a better case could probably be made on behalf of the modern origin theory. In connection with this question, I think the translation from the Greek in the footnote on p. 93 would be both clearer and more accurate if the words "so that a man can let his body down" were added after the word "lies." The translation would then read: "Look at the eaves, where the empty space of (or between?) the triglyphs lies, so that a man can let his body down; men of courage can attempt such a task, though cowards would make nothing of it."

Professor Gilbert Murray's free translation reads as follows:—

"Ah, see: far up, between each pair of beams
A hollow one might creep through! Danger gleams
Like sunshine to a brave man's eyes, and fear
Of what may be is no help any where."

With regard to the second point, Mr. Statham's book is particularly strong, special attention being drawn to the connecting links between the styles in a manner which should put out of its misery once and for all the old and dying notion that the history of architecture can be divided into phases which have no connexion with each other.

To consider now the third point, the reasons at the back of the various styles. Mr. Statham deals excellently with the important question of construction, though Roman construction might

have been better illustrated, and one is rather inclined to doubt the statement on p. 150 that "the Romans employed cross-vaulting . . . apparently not for constructive but for æsthetic reasons; they continued to employ a columnar order in the interior of the hall, and this was the only way in which they could establish a direct relation in design between the vault and the columns." Is it not more probable that the cross-vault was used primarily to bring the load down on definite points—as indeed the author had previously suggested—and to simplify the problem of lighting a great hall, and that the order was then introduced as a decorative adjunct?

Again, while Mr. Statham's treatment of Romanesque and Gothic vaulting is on the whole very clear, I think many students will have difficulty in grasping the explanation given on pp. 359 and 360 of a cross-vault with a level apex: "We should have . . . to stilt the wall arches, . . . to leave the transverse arches . . . semicircular, and to build the diagonal arches . . . as segmental arches, a method which involves a disagreeable twist in the line of the diagonal ribs." What this method would involve is a twist in the infilling.

To find an indication of Mr. Statham's views on the questions of suitability to environment and purpose one naturally turns to his account of the Greek Revival in England (p. 525): "'Back to Greece' was the cry, without any consideration as to whether the climate of England and the conditions of modern life were suitable to Greek architecture"; and again on pp. 527-8, in dealing with St. George's Hall: "It is true that the interior is very badly planned for its purposes, and the corridors lamentably deficient in light; but in those days, and in Elmes's mind certainly, that was a matter of quite secondary consequence provided that a grand architectural effect were obtained; and perhaps, for architecture, that extreme is better than the opposite extreme of ultra-utilitarianism."

But while the last sentence contains a degree of truth, one is inclined to wish that the author had omitted it, for there is some little danger that suitability to purpose may once more be considered as "a matter of quite secondary consequence" and Mr. Statham may be quoted in defence of putting utility second to appearances.

With reference to my fourth point, one is pleased to find references to, and illustrations of, a number of English Renaissance country houses; but while these and many other comparatively small buildings are dealt with, no doubt is left in the mind of the reader as to which are the really great works of architecture.

And, to deal with my last point, the book excellently fulfils its purpose as an introduction to the study of architecture. Its readers will surely be led to further studies, not only from more advanced books dealing in detail with parts of this great

subject, but—and this is of far greater importance—from the buildings themselves.

The title, *A Short Critical History of Architecture*, is well chosen. The author criticises the buildings with which he deals, and he criticises them fearlessly, as may be gathered from the comments which I have quoted on St. George's Hall and from the fact that he tells us and shows us by an illustration how the interior of the Pantheon *ought* to have been designed. Whether we agree with his criticisms in every case is not an important matter; what is important is that he leads his readers to think for themselves, rather than to accept dogmatic statements.

Many amateurs have been content with their skill in detecting the date of a given architectural feature, and while this ability is interesting, to some extent useful, and usually astonishing to uninstructed friends, how much more interesting architecture becomes when it is studied in the ways indicated by Mr. Statham!

It may seem ungrateful to ask for more when so much excellent fare is provided, yet one cannot help regretting that a little more space could not have been found for discussing recent architecture, particularly in our own country, for anything which helps to strengthen the impression that architecture is not merely a matter of the past is helping indirectly to build up a living architecture.

The general arrangement of the book departs from the usual in several particulars. It is interesting, for instance, to see Roman work in Egypt dealt with under the heading of Roman architecture. If the average student were asked to describe Roman work outside Italy he would probably forget all about Roman work in Egypt. If, however, he were asked to give an outline account of Egyptian architecture, he would in all probability include the Roman work. Such is the influence of the arrangements adopted by the writers of books!

In the book we are considering there are about 600 pages and a rather larger number of excellent illustrations, including a good number of very useful plans, sections, and other diagrams. It is interesting to note that in the comparison of the Greek orders (p. 80) the monument of Lysicrates is correctly shown as a circular building.

In giving an illustration (fig. 83) of the Ionic order of the Erechtheion the particular portico from which the order is drawn might have been mentioned with advantage. On p. 111 it is stated that the frieze of this building was left plain—but was it not adorned with attached figures?

On p. 85 it is stated that the columns of the Parthenon are nearly 6 diameters in height, and on p. 101 that those of the Theseion are about $6\frac{1}{2}$ diameters in height. I think it would be more nearly correct to give these heights as approximately $5\frac{1}{2}$ and $5\frac{3}{4}$ diameters respectively. This may seem rather a small matter, but I remember being rather mystified some years ago on reading

that Dr. Dörpfeld gave the Theseion a later date than the Parthenon, because my edition of Mr. Phené Spiers's *The Orders of Architecture* gave the height of the columns at the Theseion as 5.15 diameters.

And I do not think it is quite safe to say, as the author does on p. 141, that unless the Romans had used the outer triglyph centrally over the angle column the Renaissance architects would not have adopted this treatment.

Fig. 398 ("Development of English Window Tracery") would be improved by the addition of a few more joints.

The dating of and the addition of scales to the illustrations, the chronological appendices, and the glossary are very useful features. The last chronological appendix, for instance, shows at a glance how the Renaissance had developed in Italy when, say, King's College Chapel was being built in England.

The book is well indexed, and Mr. Batsford's share of the work is done as Mr. Batsford usually does it.

To sum the matter up, this book, which deals with architecture in a stimulating manner from the pyramids of Egypt to the skyscrapers of America (and, as candidates for the R.I.B.A. Intermediate will be pleased to learn, does not fail to give an account, with illustration, of the Churrigueresque style) can be recommended with confidence to all those for whom it is intended.

W. S. PURCHON [A.].

Sheffield.

THEORETICAL CONSTRUCTION.

Stresses and Strains: their Calculation and that of their Resistances by Formula and Graphic Methods. By P. R. FARROW [F.]. Second edition revised. 8s. Lond. 1912. 5s. net. [Whittaker & Co., 2 White Hart Street, Paternoster Square, E.C.]

That there is evidently a demand for a small book dealing with the elementary principles of theoretical construction is shown by the fact that it has been found necessary to issue a second edition of the above volume. As stated by the author at the commencement of the book, it is written primarily for the student preparing for the R.I.B.A. Intermediate and Final Examinations, with the assumption that his knowledge of mathematics and mechanics is very limited. In our opinion this is rather an unfortunate standpoint for the author to take, for more reasons than one. In the first place it is questionable whether it is ever advisable to base the subject-matter of a book on certain definite examinations; examiners and their methods are apt to change, and in addition the syllabus of the examination may be altered occasionally, and it is impossible to be continually revising a book to meet such changes. In the second place it seems hardly fair to assume that

the average student either has very little mathematical knowledge or has forgotten all he has ever learnt. For example, the first chapter is written in such an elementary manner that the student is supposed not even to know the meaning of such every-day terms as "equation" and "formula." As the book proceeds, however, the author evidently changes his opinion, for the last chapters are far more advanced than the opening ones.

As regards the contents of the book, the theory of construction is fairly fully dealt with, but to a student who is obviously assumed to have previously known nothing about the matter the explanations in many parts are not very clear or convincing; we fear, for instance, that the explanations given of such terms as "radius of gyration" and "moment of inertia," which nowadays figure in nearly every calculation dealing with struts and beams, would convey very little to the uninitiated. No mention at all is made of the method of determining the strength of a beam from the moment of inertia and section modulus; instead, the author uses throughout the crude formula $W = \frac{cad}{L}$.

The chapter dealing with the reciprocal diagram of forces—a most difficult subject to explain in writing—is certainly one of the best in the book, but unfortunately is not complete, as the student is not shown how to ascertain the nature of the various stresses in the frame diagram from the reciprocal diagram.

As regards the diagrams, these are all collected at the end of the book, and are so arranged that they can be unfolded and referred to in conjunction with the letterpress dealing with them without having constantly to turn backwards and forwards. This is the most convenient method where, as in this case, there are several diagrams drawn on one sheet dealing with descriptive matter printed on several pages, so rendering the interleaving of the diagrams practically impossible. The diagrams are very clear and well drawn, but appear to be arranged quite haphazard.

The examples in general are carefully worked out, but are not always happily chosen, and in one case at least (on page 25) insufficient data are given to arrive at the answer.

Although, as previously mentioned, the explanations generally are not as clear as one could wish, it is impossible to overlook the fact that the elements of the subject of "stresses and strains" are exceedingly difficult to explain to a beginner, particularly if he is assumed to know practically nothing about mathematics and mechanics, on which the whole subject is based from its foundation. It is certainly increasing the author's task many-fold to attempt to teach two complete subjects at the same time.

DIGBY L. SOLOMON [A.], B.Sc.Lond.

LIVING TRADITIONS OF INDIAN BUILDING CRAFT.

AN investigation was undertaken a year or so ago by Mr. Gordon Sanderson, Superintendent of Muhammadan and British Monuments, Northern Circle, United Provinces and Punjab, with a view to collecting facts as to the survival in India of native traditions of the art and craft of building. The results are summarised in the recently issued Annual Progress Report for the year ending 31st March 1912. The inquiry was set on foot by the Indian Government at the instance of the India Society, who suggested that officers of the

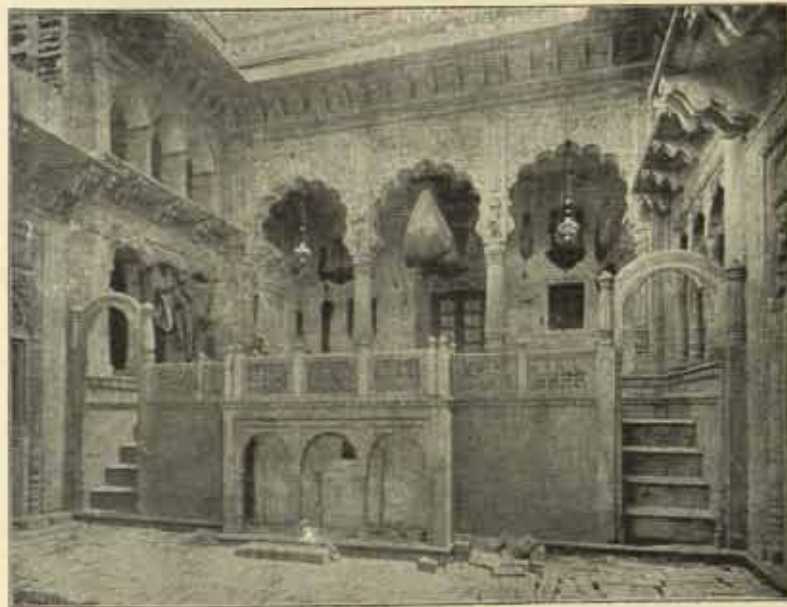
from any desire on the part of those asked to conceal anything, but because the workmen themselves were of such humble origin and status, and no one knew exactly where they lived.

The "Indian craftsman" or "master mason" exists without doubt. His remuneration is about eight to ten annas a day. He is responsible for the stone work of the building, its erection, and ornament, for which he makes no drawings, but relies on his traditional methods. He is generally illiterate and in the humblest station of life. His work, considering all things, is most creditable. If he is employed on new buildings, especially those subjected to European influence, the greatest care has to be exercised to keep him from trying to improve on old forms with his own ideas of design, which, as he has had no education, cannot be expected to be thorough. As a copyist he excels.

Indian architects are very few in number. In native States one or two most creditable members of the profession exist, but until the Indian gets a more thorough architectural training he cannot be expected to design and build large edifices which will comply with the necessities of present-day conditions. . . . At present the architectural profession does not seem to appeal to the Indian. It is not well paid, and it means perpetual study. . . . Modern architecture in India suffers principally from the want of an appreciative public and the rivalry of large commercial enterprises who encourage building perhaps more than anything.

The Daoji Temple at Agra was designed and built by the men seen at work on a piece of ornament in the illustration below. These, says Mr. Sanderson, are "true master craftsmen." Other illustrations in the Report include the

Guest House in the palace at Jaipur, one of the many pleasing buildings designed by the Indian architect, Lal Chiman Lal, the Darogah Imarat (Building Superintendent) of Jaipur State.



THE DAOJI TEMPLE AT AGRA.
Designed and built by Indian Master Craftsmen.

Archæological Department should photograph when on tour any interesting types of modern Indian buildings, and note the names, addresses, and local rates of remuneration of the principal craftsmen concerned in the design and execution of the buildings. Mr. Sanderson states that his first step was to write to the various officers requesting to be informed of any modern building of architectural merit in their division constructed and designed entirely without European supervision. Twenty-one replied that there were no such buildings, and seven others instanced buildings at Delhi, Ajmer, Lucknow, Allahabad, Muttra, Amritsar, and Saharanpur. To quote Mr. Sanderson :

A visit to Rajputana States showed, however, that there at least the art of building still flourished. There, too, the Indian "architect" existed, not, it is true, quite up to the standard of his modern European confrère, but still he was to be found. He had not been spoiled, as had his fellow in the average cantonment station. The Rajputana craftsmen, too, carved in purer form; their detail had not become too exuberant. . . .

It was extremely difficult to get any names; not



INDIAN MASTER CRAFTSMEN.



9 CONDUIT STREET, LONDON, W., 11th January 1913.

CHRONICLE.

The New Year's Honours.

In the distribution of the New Year's Honours, the claims of architecture have been signally recognised by the bestowal of a baronetcy upon Mr. T. G. Jackson, R.A. At the General Meeting last Monday, the President, Mr. Reginald Blomfield, A.R.A., gave expression to the gratification that is everywhere felt in the profession that one of its members should receive this high distinction. Members of the Institute, the President remarked, all wished that Sir Thomas Graham Jackson was a member of their body, but they knew that he had the interests of architecture at heart, and that they could always count upon his co-operation in their efforts for the advancement of their art. Though he was not a member, his relations with the Institute had always been of the friendliest character. He had attended their meetings, and had contributed to the proceedings by reading Papers and taking part in discussions on various subjects. Architectural education was a matter in which he had always taken a lively interest, and when, some years ago, the Institute established the Board of Architectural Education, he showed his practical appreciation of their work by the acceptance of a seat on the Board. Three years ago, on the nomination of the Institute, he had received the distinction of the Royal Gold Medal for Architecture. On the motion of the President, the Meeting resolved by acclamation that the congratulations of the Royal Institute be conveyed to the new Baronet.

A baronetcy has also been conferred upon Mr. Herbert H. Bartlett, of the firm of Messrs. Perry & Co., building contractors. Mr. Wm. Woodward [F.], at the same meeting, asked permission to refer to the circumstance, remarking that Sir Herbert Bartlett had been present among them on many occasions when the subject of building construction was under discussion at the Institute. He was one of our most eminent building contractors; his work was of a very high order indeed, and he well merited the distinguished honour which had been bestowed upon him. He gathered from the newspapers that

Sir Herbert Bartlett had, with his accustomed generosity, made a very handsome contribution to the institution which they all regarded with so much favour—viz., the London University.

The Safety of St. Paul's.

Sir Francis Fox, M.Inst.C.E., who has had exceptional experience of engineering problems in connection with such works as the piercing of the Simplon Tunnel, the saving of Winchester Cathedral, and the preservation of Santa Sophia in Constantinople, has been consulted by the Dean and Chapter of St. Paul's as to the danger to the Cathedral of constructing in close proximity to it the tram subway proposed by the London County Council. The following is an extract from his report:—

I had the advantage of examining the fabric some years ago, under the guidance of your late architect, Mr. Penrose, and again at a later date with Mr. Somers Clarke, so that I am well acquainted with the building.

I am sorry to say that I observe very decided signs of disturbance in the masonry since my former visits, and in some of the buttresses of the dome actual movement is now going on.

Not only should any further cause of weakness be absolutely forbidden, but immediate remedial measures are imperative to secure the safety of the Cathedral.

The introduction of the heavy type of motor-omnibus, with its consequently increased vibration, in such close proximity to the building is a serious evil, and ought to demand and secure protection on the part of the authorities.

It is now proposed to construct a tramway in a covered way with a terminal station under the street, within a few feet of the eastern end of the Cathedral, which would of necessity include cross-over roads where the pounding of the wheels on the points and crossings would result in heavy vibration.

I maintain that the slightest risk should not be incurred in the case of such a magnificent edifice and a national monument of such importance.

In 1831 a sewer was being constructed within 50 feet of the Cathedral near the south-east corner, and pumping in wet sand was being carried on. This would remove material from beneath the building, and has actually caused serious subsidence. Fortunately a protest was made by Mr. R. Cockerell, the then Surveyor of the Cathedral, supported by Mr. Brunel, Mr. Rennie, and Mr. Smirke, Architect of the British Museum, and the work was stopped.

I know from actual experience that the capping of gravel and sand which overlies the London clay is in its lower beds heavily charged with water, and that the subsoil is unstable.

I am informed that recently an excavation was made at the north-east corner of the Cathedral, and that the depth of the bottom of the foundation was 20 feet below the surface, and was in wet sand and gravel.

The character and depth of the foundations of the dome are not known, but the eight great piers on which it rests have moved and have sunk from four to six inches, bringing undue cross strains on to the structure, resulting in serious cracks. . . .

The question of the safety of the Cathedral is to a great extent one of equilibrium, and as the earth to be removed from the proposed terminal subway station will amount to several thousands of tons, it is not impossible that this equilibrium will be seriously

affected. I have reason to believe that the weight on the foundations of the Cathedral is excessive, and that the load on the masonry of the piers is much more than experts of the present day would venture to propose, hence it is only right that the greatest hesitation should be felt in altering the conditions surrounding the Cathedral. Were it founded on rock no harm except vibration would ensue, but it is standing on wet sand and gravel, and even peat; in fact, the actual condition of the foundations is an unknown quantity.

The depth of the foundation of the subway station approximates to that of the Cathedral footings, but whether this be so or not the risk remains, as there will still be the possibility of the bottom of the excavation lifting, due to the enormous weight of the Cathedral.

Sir Alexander Binnie, formerly Chief Engineer to the London County Council, in a letter to *The Times* of the 9th inst., refers to his long experience of foundations, particularly those of buildings in London, and states that in his opinion "there cannot be the slightest risk whatever in the proposed works near the east end of St. Paul's Cathedral."

The whole question of the stability of the Cathedral has been carefully considered (he says). In August 1907 an important committee, consisting of Sir Aston Webb, C.B., C.V.O., Mr. John Belcher, R.A., Mr. Thomas Colcutt, and Mr. Mervyn Macartney, made a most valuable report to the Dean and Chapter on the whole subject. Early in 1911 Mr. Mervyn Macartney, the present architect of the Cathedral, made, not trial borings, but actual excavations to ascertain the depth of the foundations at the east end of the Cathedral in connection with the very matter that at present is the subject of controversy regarding the construction of the proposed tram subway in the new street.

Mr. Macartney found that the depth of the foundations at the east end varied from 10 feet to 16 feet below the level of the crypt floor, and at that point rested upon a bed of gravel quite clear of any superficial deposit. This at once disposes of Sir Francis Fox's statement that the east end of the Cathedral is founded in some places on peat.

At the level of the foundations and 4 feet below, no water was found; and, from the investigations made by the above quoted committee in 1907, the water level is in all probability 7 feet below the eastern foundations of the Cathedral.

Some misapprehension appears to have occurred owing to trial borings which have been put down within the Cathedral; and it has been assumed that the foundations of the walls of the Cathedral and the main supports of the dome were carried to no greater depth than a little below the crypt level.

And now, what is the matter complained of at the present time? That it is proposed to construct a shallow tram subway, the nearest point of which will be 65 feet distant from the east end of the Cathedral, and the foundations of which will be from 4 feet to 5 feet above the level of the foundations of the eastern end of the Cathedral; and they will be situated at least 8 feet above the water level which exists in the ground below the Cathedral.

Two facts are therefore self-evident:—(1) That the proposed foundations cannot undermine those of the Cathedral; and (2) that they cannot abstract water from below the Cathedral as they are proposed at a higher level.

Mr. Mervyn Macartney, speaking on the question at the City of London Tradesmen's Club on

the 9th inst., is reported by *The Times* to have said that he "altogether disagreed with the views of Sir Alexander Binnie," whose "statement that the bottom of the proposed tramcar subway would be something like 4 feet above the foundations of the eastern end of the Cathedral was incorrect."

Mr. Asquith, questioned in the House of Commons last Monday, said that he was quite sure that no Committee of the House would allow any scheme to be carried through which would endanger the stability of the Cathedral.

The Problem of London.

The excellent New Year's number of the *British Architect* is devoted almost exclusively to schemes for the improvement of London and to suggestions for the solution of the great problem of its future growth. Under the heading "The Problem of London" are printed communications from well-known people, mostly members of the Institute whose names have become identified with this question, and the burden of all is the need that exists for a well-considered plan. This matter, it is understood, is one of the questions to be brought forward at the public meeting of the London Society to be held under the presidency of the Lord Mayor at the Mansion House on Monday, the 13th January. Among the contributors is the President of the Institute, Mr. Reginald Blomfield, A.R.A., who writes:—

The present state of affairs in regard to the planning of London is far from satisfactory. The authorities are not co-ordinated. Each controls some fraction of authority, but there is no central power, and no plan for the systematic laying-out of new main thoroughfares in London and Greater London. It is the preparation of such a plan that seems to me most urgently wanted.

It would, of course, be a work of great difficulty, involving careful inquiry in detail, much local knowledge, and the special ability of trained designers; and the London Society is doing a valuable service in calling the attention of the public to the necessity of a far-seeing scheme, if the planning of London is to be saved from drifting into hopeless muddle. We suffer great inconvenience from the want of foresight of past generations, but at the rate of expansion of the London of to-day, it will be nothing to what the next generation may be in for. For years past architects have pleaded for more serious consideration of civic architecture, and the time has come for a resolute effort to concentrate public attention on this important problem.

Sir Aston Webb, C.B., R.A., writes:—

Once again a cry has arisen for a plan, and so far no plan has been given us! Some of us remember forty years ago, when Paris was beleaguered, a great cry arose for a plan—for a way out—but no plan was finally forthcoming, and the city fell.

To-day London is beleaguered by over twelve town-planning schemes, encircling the perimeter of its site, prepared by different bodies without any central authority to guide, direct, or control; and London, like Paris, helpless and fearful, calls aloud for a plan, and again no plan is forthcoming to secure a rhythmical

and reasonable way out for the main routes into and out of London.

The Presidents of the Royal Academy, the Royal Institute of British Architects, the Institution of Civil Engineers, the Surveyors' Institution, and the Municipal Engineers recently joined in a request to the Prime Minister to receive a deputation on this vital and urgent matter, but so far no response has been received.

What is immediately wanted is some central authority, with power to sanction and lay down a plan for the main arteries in and out of London, before these town-planning schemes receive the final sanction of the Local Government Board. Much of the spade work for such a plan has already been done, and with such a main road plan once agreed upon, the rearrangement of central London would become easier and more practicable.

If the London Society, at the Mansion House meeting, asks with no uncertain voice for such a plan, it may help to wake Londoners up, and realise that there is now a last chance for securing the extension of London as an ordered whole, which if lost, is lost for ever.

The subject is also discussed by, among others, Professors Adshead and Beresford Pite; Messrs. Wilmot Corfield, D. Barclay Niven, Chairman of the Executive Committee of the London Society, Halsey Ricardo, Raymond Unwin, Paul Waterhouse, and H. J. Leaning, Hon. Secretary of the London Society.

Not the least interesting contributions to the number are reproductions of two beautiful drawings, 21 inches by 6½ inches, from the familiar hand of Mr. Raffles Davison, whose enthusiasm in all that concerns the beautification of London is well known. One of these, entitled "Derelict London," represents the south side of the Thames as it now exists from Blackfriars to Vauxhall. Mr. Wilmot Corfield describes the drawing as "one of those precious things demanding the guardian care due to all works of art that may not be duplicated; and Mr. Davison, artist and Londoner, is to be congratulated on the strength, beauty, and fidelity to truth of this notable riverside output of his genius. We see before us the endless, sprawling chaos of misbegotten South London, the Shot Tower prominent at the apex of the blunt peninsula at the shoulder of the Surrey shore. . . . Far in the rear of the picture is the Crystal Palace, and between the Sydenham heights and the Shot Tower lies a whole world of colourless streeted bewilderment." The other drawing, entitled "Reclaimed London," shows the same site converted into a noble tree-planted embankment, with a background of stately buildings and wide thoroughfares. Charing Cross Station is removed to the south side of the river contiguous to the Waterloo Terminus, and the present railway bridge has given place to a fine low-level road bridge in continuation of Northumberland Avenue. Mr. D. Barclay Niven contributes a well-thought-out plan, based upon the Ordnance Survey Map, which shows at a glance the remarkable transformation proposed for this quarter of London and the tremendous architectural possibilities of the re-planned area.

The New Delhi.

In the House of Commons last Tuesday,

Mr. King asked the Under Secretary for India whether the Government of India or the India Office had consulted Mr. John Begg, the Consulting Architect of the Government of India, on the plan and architecture of the new Delhi, and, if so, whether any report by him would be published; and, if he had not been consulted, whether he would be called on to report on the practicability of employing Indian architects and craftsmen in constructing the new capital.

Mr. H. Baker, who replied, said: In the ordinary course of business the Government of India will take the opinion of their consulting architect on the proposed ground-plan of the new capital, the designs for particular buildings, and the extent to which Indian craftsmen and designers can be employed. It is not usual to publish confidential reports of this kind, and the Secretary of State cannot say what course will be followed by the Indian Government in the present case.

Mr. King: We may take it that if Mr. Begg has not been consulted he will be.

Mr. H. Baker: If he has not been, he certainly will be.

Readers of the JOURNAL will recall in this connection the article headed "The Indian Master Builder" reprinted in the issue of the 23rd November [pp. 59-60], from Mr. John Begg's *Annual Report on Architectural Work in India for 1912-1913*, where the question of the employment of native master builders and craftsmen is discussed. Some further light is thrown on the subject in Mr. Gordon Sanderson's *Annual Progress Report, Northern Circle, United Provinces and Punjab*, which has given material for the article in the present issue entitled "Living Traditions of Indian Building Craft." One can form from these two articles a very good idea of the condition of native building craft in India at the present day.

Lectures on the Building Arts.

The Carpenters' Company are giving the following series of lectures relating to the art and craft of building:

- Jan. 8.—Sir Alfred East, A.R.A., P.R.B.A. [*Hon. A.J.*]: "The Value of Colour to the Crafts."
- Jan. 15.—Herbert Batsford: "Craftsmanship in London as I have seen it."
- Jan. 22.—Alfred Drury, A.R.A.: "A Demonstration in Modelling."
- Jan. 29.—J. M. W. Halley: "The Craftsmen of St. Paul's."
- Feb. 5.—Walter H. Godfrey: "Practical Value of Historical Study to Modern Craftsmanship."
- Feb. 12.—W. Bainbridge Reynolds: "Metal Work."
- Feb. 19.—H. J. L. J. Massé: "The Pewterer's Craft" (a demonstration).
- Feb. 26.—E. W. Tristram: "Ancient English Wall Painting."
- Mar. 5.—Walter Cave [*F.J.*]: "Cottages."
- Mar. 12.—Professor Selwyn Image: "Pictorial Art as applied to Buildings."

Tickets of admission can be obtained on application to the Secretary R.I.B.A., or from the Clerk, Carpenters' Hall, London Wall, E.C.

Reinstatement of Member.

The Council, in the exercise of its authority under By-law 22, has reinstated Mr. Ralph Waldo Beddingfield, of Leicester, as Associate of the Royal Institute.

CORRESPONDENCE.

Christchurch Priory.

The Society for the Protection of Ancient Buildings,
20 Buckingham Street, Adelphi, W.C.: 10 Jan. 1913.

To the Editor, JOURNAL R.I.B.A.—

SIR,—In your issue of 7th December 1912, above a summary of a letter from Sir T. G. Jackson, R.A. (*The Times*, 5th Dec.), appears a note "To reassure any who may have felt alarm for the integrity of this beautiful old church." This Society begs that you will give it space to direct the attention of your readers to the letter written in reply to Sir T. G. Jackson (*The Times*, 7th Dec.). This request is made as it appears the best way, without quoting a long list of items, to show that there is a real danger of damaging the ancient features of the Priory if the work of repair continues as it has been begun.—I am, Sir, your obedient servant,
A. R. Powys, Secretary.

THE EXAMINATIONS.

Preliminary.

The Preliminary Examination, qualifying for registration as Probationer R.I.B.A., was held in London and the undermentioned provincial cities on the 25th and 26th November. 45 candidates were exempted, and 94 were examined, with the following results:—

Centre	No. Examined	Passed	Relegated
London	39	18	21
Birmingham	8	7	1
Bristol	6	6	0
Cardiff	7	3	4
Leeds	12	10	2
Liverpool	4	2	2
Manchester	11	10	1
Newcastle	7	5	2
	94	61	33

The passed and exempted candidates, making a total of 106, are as follows:—

AITKEN: James Hunter; Biddles Farm, Farnham Royal, Bucks.
ALLCOM: William John; 49 Grosvenor Road, Westminster, S.W.
ANDERSON: David; 11 Boley Hill, Rochester, Kent.
ANDREWS: Luke MacDonald; 67 Beaconsfield Villas, Preston, Brighton.
ASHWORTH: Jordan; Fern Lea, Britannia, Bacup, Lancs.
ATHRON: Thomas Sydney; The Grammar School, Bridlington.
ATKINSON: Eric; Jesmondene, Town Moor Avenue, Doncaster.
BELL: Edgar Allen; 7 Claremont Terrace, Hanover Square, Leeds.
BRIDGMAN: Gerald Soudon; Carlyon, Cadwell Road, Paignton.

BOWMAN: William Hesketh; 112 Bolton Road, Pendleton, Manchester.
BROWN: Robert; The Glen, Joppa, Edinburgh.
CALLENDER: George Wilfred; c/o Bank of New Zealand, 1 Queen Victoria Street, E.C.
CAVANAGH: Leonard Francis; 2 Selwyn Road, Upton Manor, E.
CHADWICK: Herbert Lloyd; 7 Northgate Street, Warwick.
CHAMBERS: John Francis; Thorne Croft, Clifton Gardens, Goole, Yorks.
CLARK: Richard John Bond; Ivydene, Barwis Terrace, Penzance, Cornwall.
CLAYTON: Gerald Rupert; 2 Oozehead Lane, Blackburn.
CLOKE: Cyril Jesse; 27 Winchester Avenue, Brondesbury, N.W.
COLE: Edward Robinson Ferdinando; 83 Bankhall Street, Kirkdale, Liverpool.
CULE: David Morse; 110 Richmond Road, Cardiff.
DAWSON: Walter; Crescent Road, Tilehurst, near Reading.
DAY: Nugent Francis Cachemaille; 39 Antrim Mansions, Haverstock Hill, N.W.
DICKESON: Colin Addison, 25 Osborne Road, Forest Gate, E.
DOTTS: Augustine L.; 16 Maryland Street, Liverpool.
DOYLE: Edmund Louis; 39 Esmond Road, Cheetham Hill, Manchester.
DREW: John; 1 Prince's Mansions, 64 Victoria Street, S.W.
DRURY: Joseph Cecil; 46 North Brook Street, Chapel Allerton, Leeds.
DYSON: Ernest Vincent; 4 Chapel Lane, Headingley, Leeds.
EVANS: David; Upper Main, Meifod, near Welshpool, Mont.
EVANS: Henry Goronwy; 5 North Parade, Carmarthen.
EVANS: Mark; 33 Empress Road, Kensington, Liverpool.
FITKIN: Barrington Thomas; The Poplars, Weston Turville, Tring.
FITTON: Roderick Arthur; Alkington Green, Middleton, Lancs.
FOSTER: Leonard; Ryecroft, Welburn Avenue, Headingley, Leeds.
FYFE: James Simpson; 147 Hunter House Road, Ecclesall, Sheffield.
GAUSSEN: William Ash; Mr. Furneaux' House, Rossall School, Fleetwood, Lancs.
GEORGE: Granville Walter Henry; 132 Goddard Avenue, Swindon, Wilts.
GEORGE: Thomas; 1 Okus Road, Swindon, Wilts.
GIBSON: William Riddle; Commercial Road, Jarrow-on-Tyne.
HALL: Arthur Leonard; 91 Hagley Road, Edgbaston, Birmingham.
HAMPSHIRE: Thomas Richard; 175 Maryland Road, Bowes Park, N.
HARDINGTON: Harold Bernard; 93 Forest Road, Hugglescote, near Leicester.
HARKER: Alec; 4 Highfield Terrace, Nuthurst Road, New Moston, Manchester.
HARPER: Ewen Alfred; 58 Oxford Road, Moseley, Birmingham.
HARPER: John Curtis; 58 Oxford Road, Moseley, Birmingham.
HARVEY: George Henry Liggins; 14 Bond Gate, Nuneaton.
HENDERSON: Eric Edward James; 13 Mutley Plain, Plymouth, Devon.
HENDRY: Morrison; 3 Pitstruan Place, Aberdeen.

- HICKSON: Clifford; Ivy Dene, Netherton, Huddersfield.
 HORTON: William John; Lynhurst, Lincoln Road, Werrington, near Peterborough.
 HOSSACK: James Davidson; Public Works Department, Pretoria, South Africa.
 IRVIN: John Hawkmore; The Orchard, Walton-on-Thames.
 JENNINGS: Gordon Sotham; Silverdale, Bloomfield Road, Moseley, Birmingham.
 JOHNS: Joseph Arnold; 67 Scott Road, Sheffield.
 JONES: Arthur Davies; Ty Mawr, Llandegai, near Bangor, North Wales.
 JOPLING: Alfred Bradshaw Boston; 20 Pearson Avenue, Beverley Road, Hull.
 KARLE: James Berthold; Sunny Bank, Bridgend, Glam.
 KEEP: Norman Pisto; 15 Belleville Road, Wandsworth Common, S.W.
 KENDALL: Maurice Henry Vaughan; Clifton College, Bristol.
 KING: Charles Edwin; 86 The Grove, Ealing, Middlesex.
 LEWIS: Harold Morgan; Sunnyside, The Crescent, Pontypridd, Glam.
 LEWIS: William Gardner; 17 Boverton Street, Roath Park, Cardiff.
 LINDOP: Fred; 2 Woodfield Street, Todmorden.
 LUMB: Joseph Haydn; 1 Whitby Avenue, Heworth, York.
 MANN: William Roderick John; 9 Otto Terrace, Sunderland.
 MANSFIELD: Roland Edward; Windermere, Victoria Road, Leigh-on-Sea.
 MARSHALL: James, Jun.; White House, 40 Norman Road, South Croydon, Surrey.
 MILNE: Frank; 181 Edmund Street West, Rochdale.
 MORRISON: John William Patrick; 13 Sharia Abdel Daiem, Bab-el-Louk, Cairo, Egypt.
 MORTON: Eric Hugh Dycks; 32 Albany Terrace, Dundee, Scotland.
 MURGATROYD: James Lees; Northwold, Pinner Green, Pinner, Middlesex.
 MUSMANN: Ernest Paul Brander; The Oaks, 61 Frognaal, Hampstead, N.W.
 OATLEY: Maurice Joseph; 48 Denton Road, Hornsey, N.
 OGDEN: John Cecil Blair; Longland View, Margam, Port Talbot, South Wales.
 PAICE: Cyril Laurence; Aldermaston, Mill Road, Cromer, Norfolk.
 PICK: Hugh Spencer; 2 Salisbury Road, Leicester.
 PIERCE: Stephen Rowland; 9 Villa Road, St. Leonards-on-Sea, Sussex.
 PIMM: Francis William Cecil; 88 Union Street, Torquay, Devon.
 PITE: Ion Beresford; 2 York Gate, Regent's Park, N.W.
 QUINN: Cecil Darley; Brooklyn, Alexandra Park, Manchester.
 RAMSDEN: Eric Alfred; 34 Clarendon Road, Leeds.
 REES: David James; 92 Llewellyn Street, Pontygwaith, Glam.
 ROBERTS: Charles Henry; 189 Christchurch Road, Boscombe, Hants.
 ROBERTS: Evan Wendell; Railway Inn, Penclawdd, Swansea.
 ROWNTREE: Thomas Herbert; Normanby House, Newlands, Middlesbrough.
 SEXTON: George William Francis; "Rosemount," Christchurch Avenue, Brondesbury Park, N.W.
 SHREWSBURY: Roland Hulbert; 25 Snowden Road, Eccles, Manchester.
 SHURMUR: Stanley Emberick; Loughrigg, The Drive, Walthamstow, Essex.
 SIMPSON: William, Jun.; Denethorpe, Stockton Road, Ryhope, Sunderland.
 SMITH: Horace; 50 Hibson Road, Nelson, Lancs.
 SNELL: Alfred; Church Street North, Liskeard, Cornwall.
 SOPER: Charles Edward; 220a Roundwood Road, Willesden, N.W.
 STEPHENS: Herbert Stanley; Lemberg, Dukes Avenue, Church End, Finchley, N.
 TROTTER: Alexander Nigel; 44 Chepstow Place, W.
 TUBBS: Grahame Burnell; 68 Aldersgate Street, E.C.
 USHER: William Arthur; 131 Warwick Road, Carlisle.
 WALLIS: Cyril; Longbar, Davis Avenue, Roundhay, Leeds.
 WEBSTER: Frank Osborne; Mayfield, Sprowston Road, Forest Gate, E.
 WESTON: Kingsley Vale; 19 Epperstone Road, West Bridgford, Nottingham.
 WHITEHOUSE: Cecil Norman; 6 Manor Road, Edgbaston, Birmingham.
 WHITELEY: Fred Draper; 27 Gordon Street, Elland.
 WHITTHAM: Harold Heaton; Rose Bank, Bingley, Yorks.
 WILLIAMS: Edward; 7 Tenby Street, Splott, Cardiff.
 WILLIAMS: Leonard Sangdon; The Bryn, Gold Tops, Newport, Mon.
 WILSON: Sydney; 26 Heaton Road, Heaton, Newcastle-on-Tyne.
 WINDLE: Frank; 183 Chatsworth Road, Chesterfield.

Intermediate.

The Intermediate Examination, qualifying for registration as Student R.I.B.A., was held in London and the undermentioned provincial cities from the 22nd to the 29th November. 93 candidates were examined, with the following results:—

Center	Number Examined	Passed	Returned
London	58	36	22
Bristol	2	1	1
Cardiff	2	2	0
Glasgow	4	4	0
Leeds	7	3	4
Liverpool	4	2	2
Manchester	12	5	7
Newcastle	4	3	1
	93	56	37

The passed candidates are as follows, the names being given in order of merit:—

- FRANCIS: George Eric [P. 1910]; 210 Vener Road, Sydenham, S.E.
 STAINSBY: George Pawson [P. 1908]; 24 Newby Terrace, Stockton-on-Tees.
 BAIN: George [P. 1906]; 66 Broomwood Road, Clapham Common, S.W.
 LANCASTER: Claude [P. 1907]; 267 Westmorland Road, Newcastle-on-Tyne.
 GUTTERIDGE: Richard Howard [P. 1911]; 25 Osborne Road, Forest Gate, E.
 HALE: Percy Edward [P. 1908]; 244 Queen's Road, Dalston, N.E.
 ANDREW: Harry [P. 1911]; 56 Whitefriargate, Hull.
 VINDEN: Gilbert [P. 1910]; 57 Eastern Avenue, Reading.

- CHEEK: Cyril Cliff [P. 1911]; 36 Crockerton Road, Wandsworth Common, S.W.
- PEERMAHOMED: Abdulla Bhanji [P. 1909]; 45 Brondesbury Villas, Kilburn, N.W.
- MOORE: Joseph [P. 1909]; "Sunny Bank," Armstead Road, Beighton, near Sheffield.
- ROBINSON: Norgrove Stuart; 5 Wroxham Mansions, Canfield Gardens, N.W.
- BATES: Cyril Francis; "Bindon," Serpentine Road, Newport, Mon.
- DODDINGTON: William [P. 1911]; 94 Revelon Road, Brockley, S.E.
- DAVIES: Hugh Frederic [P. 1910]; 41 Liverpool Road, Chester.
- COOPER: James Gough [P. 1911]; 52 Gowan Road, Willesden Green, N.W.
- HEAD: George Leslie [P. 1911]; 12 Mapesbury Road, Cricklewood, N.W.
- BRUETON: Bertrand Frederick [P. 1911]; 70 Ashleigh Avenue, Bridgwater.
- WALLER: Thomas Jenkinson [P. 1908]; 13 Brierlyville, Durham.
- MOSS: Donald John [P. 1911]; 44 Linden Grove, Peckham Rye, S.E.
- ALDOUS: Charles Fencott [P. 1908]; 34 Rusholme Road, Putney, S.W.
- THOMAS: David Reece [P. 1911]; c/o W. D. Jenkins, Esq., George Street, Llandilo, South Wales.
- MACKENZIE: Gilbert Marshall [P. 1911]; 1 Victoria Street, Westminster, S.W.
- ACKROYD: Samuel William [P. 1909]; 19 Abbey Walk South, Halifax.
- ADAMS: Walter Alwyn Cole; 13 Glaibury Road, West Kensington.
- ASHENDEN: Harold Campbell [P. 1911]; Ventnor House, London Road, Canterbury.
- BAGENAL: Philip Hope Edward [P. 1909]; 3 Justice Walk, Chelsea, S.W.
- BREWILL: Lionel Colin [P. 1909]; 44 Parliament Street, Nottingham.
- BULL: Joseph William [P. 1911]; 55 Carlingford Road, Green Lanes, N.
- BUTCHER: Albert John; Hamilton House, Clifton Road, Weston-super-Mare.
- CALDWELL: O. Reginald [P. 1906]; Elmsdale, Alexandra Road, Penzance, Cornwall.
- CHANDLER: Allen, junr. [P. 1910]; Elston Lodge, near Bedford.
- COOKSEY: Harold Thoresby; 266 Upper Street, Islington, N.
- CURRIE: John Kirkwood [P. 1910]; U.F. Manse, Keig and Tough, Aberdeenshire.
- EILOART: Ronald Edward [P. 1906]; 17 Elsworth Road, N.W.
- EVANS: Thomas Cwmanne [P. 1911]; Glyn Teify, 61 Munster Road, Fulham, S.W.
- GOODSALL: Robert Harold [P. 1908]; Chiltern, Tankerton-on-Sea, Kent.
- GRANT: John Duncan [P. 1906]; Drumalan, Drumadrochit, Inverness-shire.
- HILL: Geoffrey Walker [P. 1907]; 38 Albion Street, Leeds, Yorkshire.
- HOWE: John Liberty [P. 1907]; Farringford, Northwood, Middlesex.
- HUDSON: Thomas; 9 Westwood Road, Bolton.
- KAY: Mitchell Crichton [P. 1910]; 4 Renny Place, West Ferry, Scotland.
- LEIGHTON: Henry Birkett [P. 1908]; 68 Upper Albert Road, Meersbrook, Sheffield.
- LUYKEN: Heinrich Martin [P. 1910]; 23 Arcadia Gardens, Wood Green, N.
- MACKEY: Samuel Armstrong Hurst [P. 1902]; 12 Crossfield Street, Warrington.
- MEREDITH: Edward [P. 1908]; 65 Warwick Road, Earl's Court, S.W.
- MORTIMER: Alan Lee [P. 1911]; 23 Langham Avenue, Sefton Park, Liverpool.
- NATHANIELSZ: John Julian [P. 1908]; c/o Messrs. Thomson & Sandilands, 4 Jane Street, Blythswood Square, Glasgow.
- PHILLIPS: Aubrey Wyndham [P. 1903]; 67 Gwydr Crescent, Swansea, South Wales.
- PORTSMOUTH: Oliver Spencer [P. 1910]; 7 Richmond Villas, Swansea.
- ROBINSON: John Joseph [P. 1911]; 33 Victoria Avenue, Dennybrook, Dublin.
- SEABROOK: Samuel Broughton [P. 1909]; 10 Willoughby Road, Ipswich.
- SLATER: Martin Johns [P. 1908]; 8 Lower Brooks Street, Ipswich.
- WATT: John D. [P. 1910]; Pentlands, 17 Ramuz Drive, Westcliff-on-Sea.
- WILSON: James Frederick; 20 Preston Avenue, Newport, Mon.
- WYNNE: Thomas Stanley [P. 1907]; Malvern Villas, Northop Hall Village, near Northop, Flint.

The number of failures in each subject of the Intermediate Examination was as follows:—

A. Principal Styles and General History of Architecture	18
B. 1. Simple Applied Construction	21
B. 2. Theoretical Construction	26
C. 1. Historical Architecture:—	
(a) Greek and Roman	11
(b) Byzantine and Romanesque	1
(c) French and English Gothic	2
(d) Italian, French, and English Renaissance	3
C. 2. Mathematics and Mechanics	2
C. 3. Design	11

Exemptions from the Intermediate.

The following Probationers possessing the certificates required under the regulations were exempted from the Intermediate Examination and have been registered as Students, viz.:—

- HUDSON: Frank Ernest [P. 1909]; Y.M.C.A., Edmonton, Canada; and 66 Greyhound Lane, Streatham. [Two years' course, University of London, King's College.]
- MACKELLAR: Robert Norman Houghton [P. 1911]; 3 Cathkin Road, Langside, Glasgow. [Diploma, Glasgow School of Architecture.]
- MUSMANN: Ernest Paul Brander [P. 1912]; The Oaks, 61 Frogna, Hampstead, N.W. [Three years' course, University of London, University College.]
- SPOONER: Frank Philip [P. 1908]; 10 Elsworth Road, N.W. [Architectural Association Four Years' Course.]
- ATALLA: Mohamed Ali [P. 1912]; King's College, Strand, W.C. [Two Years' Course, University of London, King's College.]

Final and Special.

The Final and Special Examinations qualifying for candidature as Associate R.I.B.A. were held in London from the 5th to the 13th December. Of the 98 candidates examined, 44 passed, and the remaining 54 were relegated. The passed candidates are as follow:—

- ALLEN-LODGE: Albert Robert [Special]; 4 Adelphi Terrace, Strand, W.C.

ANDREWS: Percy Maguire [S. 1910]; 112 Montsham Street, Chelmsford, Essex.
 BARROW: John William [S. 1910]; 16 Kensington Road, Morecambe.
 BLENKINSOPP: Henry Joseph [S. 1908]; Midland Bank Chambers, Park Street, Selby.
 BREWERTON: Frank Asquith [S. 1908]; 2 Woodlands, Whalley Road, Manchester, S.W.
 BUCKNELL: Leonard Holcombe [S. 1908]; 12 Fordwych Road, West Hampstead, N.W.
 BUTLER: Arthur Stanley George [S. 1912]; 73 Church Street, Kensington, W.
 CHISHOLM: David John [S. 1910]; 98 Esmond Road, Bedford Park, W.
 COLE: Leopold Edmund [S. 1910]; 24 Parliament Hill, N.W.
 COPE: George Arnold [S. 1908]; 1 Bisham Gardens, Highgate, N.
 COWLEY: Herbert Reginald [Special]; 24 High Street, Southend-on-Sea.
 DEWHIRST: Ralph Henry [S. 1908]; 9 Franklin Mount, Harrogate.
 FOSTER: Thomas Oliphant [Special]; 23 Old Queen Street, S.W.
 GIBSON: Edmund Herbert [S. 1909]; 37 Harberton Road, Archway Road, Highgate, N.
 GOLD: Hugh Andrew [S. 1911]; Rosebank, Dunton Green, near Sevenoaks, Kent.
 GORDON: Charles Black [Special]; 111 Petherton Road, Highbury New Park, N.
 HINTON: John Garfield [S. 1911]; The Castle, Winchester.
 HOUSTON: William Wylie [S. 1909]; 110 Fitzroy Avenue, Belfast, Ireland.
 MARTYN: Laurence Dunmore [S. 1912]; Ingram House, Stockwell Road, S.W.
 MEADOWS: Samuel Douglas [S. 1908]; Town Hall, East Ham, E.
 MOORE: Harold Edward [S. 1911]; c/o H. B. Creswell, Esq., 10 Elborow Street, Rugby.
 MILBURN: Stanley Wayman [S. 1910]; 8 Thornhill Park, Sunderland.
 MURRAY: Colin Hay [S. 1906]; 24 Gildredge Road, Eastbourne.
 NEWTON: William G. [S. 1911]; 40 Ladbroke Sq., W.
 PEASE: Alfred [S. 1910]; 3 St. Mary's Road, Worthing.
 PHILLIPS: Rees [S. 1911]; "Delamere," Parsons Green, S.W.
 PIGOTT: Richard Mountford [S. 1909]; 1 Earlsfield Road, Wandsworth Common, S.W.
 RAHBULA: Ernest Alexander Rahles [S. 1908]; 18 Grange Road, Barnes, S.W.
 REID: Claud Boileau [S. 1911]; 10 Campden House Road, W.
 ROBERTS: Thomas Leonard [Special]; Ridge Mount, Sunningdale, Berks.
 SCOTT: Harold Seymour [Special]; "Deswood," The Lickey, Bromsgrove.
 SOLOMON: Henry [S. 1907]; "Highfield," Shrewsbury.
 STENNER: William James [S. 1904]; Guildhall Chambers, Broad Street, Bristol.
 SULLIVAN: Basil Martin [Special]; 67 Worpole Road, Wimbledon, S.W.
 SUTHERLAND-GRAEME: Alan Vincent [S. 1909]; 13 Rudall Crescent, Willoughby Road, Hampstead.
 THOMS: William George [S. 1910]; 9 St. Peter's Church Walk, Nottingham.
 WAGHORN: Sydney Stanley [S. 1904]; 8 King William Street, Charing Cross, S.W.
 WALGATE: Charles Percival [S. 1905]; Royal College of Art, South Kensington, S.W.
 WALKER: Thomas [Special]; County Education Offices, St. Mary's Gate, Derby.

WEEDON: Harry William [Special]; 115 Colmore Row, Birmingham.
 WILBY: Albert [S. 1907]; 11 Tauza Road, Hampstead, N.W.
 WILLIAMS: David [Special]; Avonbourne, Elm Grove Road, Salisbury.
 WILLIAMS: Stanley Hurst [S. 1910]; Brentwood, Broomfield Road, Sheffield.
 WEINBERG: Judah [S. 1911]; 42A Connaught Street, Hyde Park, W.

The number of failures in the various subjects of the Final and Special Examinations was as follows:

A. Design	42
B. Construction	45
C. Hygiene	35
D. The Properties and Uses of Building Materials	14
E. The Ordinary Practice of Architecture	16
F. Thesis	16

COMPETITIONS.

Workmen's Cottages at Wellington. Church at South Lancing.

The Competitions Committee desire it to be known that the Conditions of these Competitions are not satisfactory, and are the subject of correspondence between the Committee and the promoters.

MINUTES. V.

At the Fifth General Meeting (Business) of the Session 1912-1913, held Monday, 6th January 1913, at 8 p.m.—Present: Mr. Reginald Blomfield, A.R.A., President, in the Chair; 13 Fellows (including 9 members of the Council), 10 Associates (including 2 members of the Council) and 2 Licentiates—the Minutes of the last Meeting having been published in the JOURNAL were taken as read and signed as correct.

Mr. E. Guy Dawber, Vice-President, acting for the Hon. Secretary, announced the decease of the following members—viz. Francis James Smith, Fellow, elected 1891; William Allen Coombs, Associate, elected 1881.

The following gentlemen attending for the first time since their election were formally admitted by the President—viz. Thomas Penberthy Bennett, Associate; Philip Bauhof, Licentiate.

A motion by the President that the congratulations of the Institute be tendered to Sir Thomas Graham Jackson, R.A., Royal Gold Medallist, on the baronetcy recently conferred upon him, was carried by acclamation; and Mr. Wm. Woodward paid a tribute to the merit of Sir Herbert Bartlett (of the firm of Messrs. Perry & Co., building contractors), upon whom a similar honour has been bestowed.

Mr. E. Guy Dawber formally acknowledged the receipt of books presented since the last Business Meeting, and a cordial vote of thanks was passed to the donors.

The Secretary announced the results of the Examinations held in November and December last.

The following candidates for membership were elected by show of hands under By-law 10:—

As FELLOWS (4).

HALL: Herbert Ansten [A. 1904].
 SMITH: Cyril Wontner [A. 1900, Pugin Student 1902].
 WARWICK: Septimus [A. 1903].
 WILLS: Herbert Winkler [A. 1887].
 The Meeting separated at 8.20 p.m.

THE BUILDINGS OF ST. MARY'S GUILD, LINCOLN,
LOCALLY KNOWN AS JOHN O'GAUNT'S STABLES.

By W. WATKINS [*F.*], of Lincoln.



ST. MARY'S GUILD, LINCOLN: FRONT ELEVATION OF EXISTING BUILDING.

THE history of the building arts extends so far back, is associated with so many countries, and embraces such a long space of time, that I will not attempt to deal with it in detail: more especially because it is sufficient for the support of the suggestion I am about to make that in the progress of the arts and crafts through Egypt, Greece, and Rome, and their connection with Constantinople, Lombardy, and Como (whence it is believed they spread to France, Germany, and Britain), the refinement of architecture and the development of the styles could not have been produced in the perfection in which they have come down to us unless there had existed in all those countries and through all that long period an organised system of education specially connected with the building crafts; and when the subject is considered in connection with this country, and especially with the ancient city of Lincoln, one becomes still more impressed with the conviction that, as all through

the Classical periods there existed such an educational system as that just referred to, so also through the Mediæval period there must have existed a similar process of education in the Gothic arts.

But as a few eminent archæologists have declined to accept the views of others equally as eminent as themselves, especially in architecture, "that a National Training School for the Building Arts did exist in this country through the Middle Ages," I feel constrained to say another word on the subject.

There are probably few cities in England with a history more varied and interesting than that of Lincoln. We see this interest in the remains of the Romans, the Saxons, the Scandinavians, and later still in those of the Normans, all of whom have left traces of their existence here. And although the Romans found no architecture of a durable quality when they first possessed them-

selves of Britain, during the four centuries of their occupation of the country they introduced and left behind them such evidence of their art and skill in the style and strength of their buildings that no doubt can exist about the source whence they came. There is still proof of this even in this ancient city of over sixteen hundred years' duration, in the remains of the old Roman walls which surrounded it as well as in the great Basilica in the Bail, in which the laws of the Roman province were administered, and where perhaps the government of the province was also carried on. But the internecine strife and generally unsettled condition of the mixed races, and consequent absence of a settled literature, have left us with but scant documentary evidence of their doings in the city. We have therefore to look for them as written in stone in the few buildings they have left behind them, and the St. Mary's Guild is just one of those Norman buildings that is interesting in this respect.

The unusual shape and plan of the building induced me to measure and draw it out to scale, in the hope of discovering the purpose for which it was erected, and the investigation has led me to believe that it was for a Training School, and that the arts and crafts of the building fraternity of the Mediæval period were taught in it for several centuries. Even in Roman times Lincoln was an important city, the metropolis of the province and chief seat of commerce, and probably of government also, a position it maintained well into the Middle Ages; and it was therefore entitled to a first place of recognition in the arts such as they were at that time.

It is generally admitted, however, that there was another and a later route by which the arts were introduced into Britain, not as in the first instance direct from Rome, but through France by the Normans after their conquest of the country; and here they germinated, and developed into the several styles of architecture we designate Mediæval. When it is remembered also that Remigius was appointed to the See of Dorchester in 1067, that the Conqueror in 1068 ordered his Castle to be built on Lincoln Hill, that in 1073 Remigius removed his See to Lincoln (and at that time the diocese embraced the eight counties of Oxford, Buckingham, Nottingham, Bedford, Huntingdon, Northampton, Rutland, and Lincoln) and at once arranged to build his Cathedral there, and that there were also innumerable churches in course of erection throughout the Kingdom, may we not well conclude that such a vast number of important buildings could not have been designed all in one recognisable style by different minds and at about the same time, unless the principles of the designs, and even the details of construction, had been learned by those in charge of the buildings in some central school or college with workshops attached to it? But those build-

ings must so far have been designed and carried out by the Norman architects and builders who were introduced into this country soon after the Conquest, and who of course could only have acquired their knowledge of architecture in their own country. The natural inference is that when once established here, isolated from the influence of the Arts and Crafts school in which they had themselves been trained, they commenced to adapt themselves to local circumstances and to develop an independent study of building matters, and after a reasonable time had been occupied in the practice of design and the art of building in England, the craftsmen would naturally establish an institution of their own on the basis of the school in which they had received their training. Here they would continue the development of the art of building by teaching its principles and practice to natives associated with them. That they did pursue such a course is abundantly proved by the evolution of the Pointed style out of the round-arched Norman into the well-defined Early English architecture, known as the First Pointed or Lancet style; and it should not be forgotten that this style was first adopted in St. Hugh's work in Lincoln Cathedral.

Not only was the Early English style of architecture first applied to Lincoln Cathedral, but this style, together with the Third Pointed or Perpendicular, is admittedly peculiar to this country, and does not therefore exist in any other country in Europe, except in an isolated case or two in France, and these are said to have been designed by Englishmen.

There must therefore have been a central authority somewhere in England which developed and taught the arts and crafts. Nearly all our chief architects and archaeologists who have interested themselves in the subject for a century past have testified to that effect; but as to how that authority was selected, whether voluntarily or compulsorily constituted, or by what means the arts and crafts were dispensed, and the exact situation or seat of that authority, have always been matters of speculation and conjecture. Mr. F. A. Paley, probably the most reliable authority on mediæval architecture in this country, in his *Manual of Gothic Mouldings*,* in referring to certain conventional forms or details, says: "Whence these forms arose, whether from a natural process of gradual development, or from some real or pretended secret of freemasonry, or lastly from mere accident or caprice, are curious questions which, so far as the author is aware, have never yet been made the subject of much inquiry"; and again: "How far the same forms were arbitrary or obligatory in ancient freemasons' work, how far they emanated from some particular source and were dispensed by authority through the country."

* Ed. 6, pp. 1 and 2.

(i.e. this country) "or were assumed by some tacit agreement on the part of the masons themselves, are equally interesting speculations, though perhaps equally difficult to determine." And further: "However this may have been, it is quite certain that a strict intercourse must have been kept up between the members of this body of artisans, or almost every ancient church would exhibit new and strange varieties in the details of their mouldings."

The italics are mine. Mr. Paley also says in another work, *A Manual of Gothic Architecture*: "England was the country in which the Gothic or Christian style was most exquisitely and most sumptuously developed in respect of its details."

Mr. Edmund Sharpe, in his *Lincoln Excursion*, 1871, in referring to the style of the three Norman doorways in the west front of Lincoln Cathedral, says: "Though their architecture was derived from the Norman, they are treated in a manner entirely distinct from that which characterises the work of that nation." And he likewise states that these doorways "prove to us in fact, along with numerous other similar works in all parts of the kingdom, the existence in England at the time of a school of native artists, who were not only completely emancipated from those influences which had governed the designs of buildings for the previous eighty years of Norman rule in this country, but who were able to design and to carry out their work with an originality of thought, a fertility of invention, and a perfection of execution, which must fully entitle them to our special notice, as well as to separate classification."

Now, if England developed the most exquisite and most sumptuous Gothic architecture, and if in Lincoln the western doorways of its cathedral, amongst other similar works in the kingdom, prove that there existed in England at the time a school of native artists, it is but reasonable to believe that a school building must also have existed somewhere in the country. We therefore naturally query where such a building could have been. Was it at Canterbury? I have never heard of one there, or the remains of one, that could possibly bear any resemblance to such a building as could at once have been suitable for a school in which to teach the arts, a private chamber in which to evolve and develop the styles, and workshops in which to practise the crafts. Is there one at York? at Durham? at Westminster? at Winchester? or anywhere in London? or in fact anywhere in Britain? now existing, or which ever did exist, that could in any way have answered such a treble purpose as that described, unless it is St. Mary's Guild in Lincoln, which building I suggest was in every way adaptable to such a purpose?

That Mr. R. F. Gould, and perhaps a few other archaeologists, have expressed their belief that the mediæval buildings of this country were designed

and erected under contracts by builders of the time, in much the same way that similar works are developed and carried out at the present day, in no wise affects the view I am taking of St. Mary's Guild at Lincoln; because Mr. Gould in his researches on the subject seems only to have followed the craftsmen from cathedral to cathedral or from one large building to another, and finding from his investigations the Lodges or wooden Domiciles there, but no record of an Arts and Crafts School, appears to have concluded that one had never existed anywhere, but that the knowledge which developed the principles and invented the characteristics of the styles came either from the clergy or was acquired by the workmen in the shops and on the works on which they were engaged.* It must, however, be quite apparent to every experienced Gothic architect of the present day, that it was absolutely impossible that such minute details as the carving in the capitals of pillars, the sections of the pillars themselves, and the clustering and forms of the shafts which surround them, as well as the sections of the mouldings and the enrichments which adorn them, and the dozens of other equally well-marked characteristics of the styles (by any one of which the date of its construction can to this day be accurately defined within a very few years, whether situate in the North, the South, the East, or the West), could have been designed by different hands in different parts of the country at the same time (as they undoubtedly were) unless the designers had been taught and trained in the same school, and by the same tutors, the principles which underlay and governed the arts at the time, and which it is believed none others were then permitted to know or to practise. That there did therefore exist in this country a building fraternity during the mediæval period of the building arts will scarcely be disputed, and it seems to me but a reasonable inference that the uniformity and purity of the styles could only have been developed and preserved, as they were, through the influence of a training school or college in which the students graduated as masters in the building arts; and that selections were made from amongst those graduates to design and take charge of the important ecclesiastical buildings which were to be erected in the various parts of the country during the Middle Ages. I could well conceive also that the purity of the styles would be further preserved by the periodical assembly of all those masters at the college of the fraternity, to discuss and decide matters of principle, and to fix upon the characteristic forms which should be adopted and practised in the future to distinguish the works of the fraternity from those of other builders.

Would not such a practice as this account for the necessity of the great hall or assembly room, which

* Introd. p. 16.

† Introd. p. 18.

* *History of Freemasonry*, Vol. 1, p. 320.

appears to have been attached to their technical schools or training establishments wherever they were built, and which is so well marked in St. Mary's Guild buildings at Lincoln?

Now, this building was erected about 1140 to 1150; it was quadrangular in plan, with an inner courtyard suitable for materials, and had probably workshops on two, if not three, of its sides.

The ground floor of the front wing facing the High Street was originally vaulted in quadripartite vaults; the entrance gateway, with its deeply recessed semicircular arch and flat pointed inner arch below it, still remains and occupies the middle bay of the front. The two end bays right and left of the entrance were probably store-rooms for the craft, for, although vaulted, the constructional features are quite plain and somewhat crudely finished, not a single moulding is to be found about them. The vaults were no doubt inserted to afford a secure foundation for the assembly room floor which they supported. Several springer corbels of the vault ribs are still *in situ*.

The upper floor above the vaulting appears to have been in one large room, of the full length and width of the front wing, and was about 63 feet long by 21 feet wide. There were apparently five two-light windows next the street, with seats inside each, each light with a semicircular head, and both were circumscribed by a larger semicircular outer arch, with label mould. The remains of three of these windows may still be seen *in situ* on the inside of this large room.

There were also two fireplaces; the remains of one of them can be seen corbelled out next the High Street, with a modern square window pierced through the back of it. There was likewise a similar window to those above described, on the opposite side of the room, facing the inner courtyard and occupying the central bay over the back archway; there may likewise have been windows in each gable end; but, as both these end walls have been refaced outside, there is nothing now remaining to prove their former existence.*

There is at the east end of the north wing on its upper floor a portion of the original wall with the remains of an original window in it having deeply recessed and splayed jambs and arch intact; and in the same wall, but on the ground floor below it, are the remains of another original window, and as it occurs in the next bay to that on the floor above, the horizontal distance from centre to centre of these two windows is by inference the horizontal distance from centre to centre of all the other bays of this wing, extending westwards up to the front main building; and it likewise fixes the position, width, and size of the staircase leading to the upper floor, as well as that of the lobby

between the private or secret chamber and assembly room. The south wing has, however, entirely disappeared, and a modern builder's workshop has been erected in its place, but I think not quite on the old foundations. There is, however, reason to believe that the south wing was precisely similar in form and size to that at the north side of the courtyard. The eastern wing has also been demolished, and a modern brick house now stands on or near its site, but when it is considered in connection with the general form of the existing buildings, there is no reason whatever to doubt that this side of the yard was likewise inclosed by a building corresponding in form and detail with the other wings.

It should also be observed that although there is nothing now to indicate the original existence of the open sheds or workshops on the ground floor of the main wings surrounding the courtyard, there is on the other hand nothing remaining in the old walls or any other part of the original buildings that could possibly have prevented them from being there; for notwithstanding the expressed opinions of some experts that the eastern end of the north wing is the remains of a Norman house, I must confess I fail to find any such remains. That part of the wall which is claimed to be the front of an old house is not original, but has been built up with old materials derived from other portions of the demolished buildings; and the upper two windows, although original in themselves, have been reset in this more modern wall with wood lintels over their inside opening. This wall is only 20 inches thick, whilst the Norman wall at the other side of the same room and exactly opposite to it was 3 feet 6 inches thick, both of them being outside walls. It is surely very unlikely, nay, one may say, almost impossible, that the Normans, heavy builders that they were, would ever think of constructing one outer wall of an important building such as this only 1 foot 8 inches thick; and least of all would they make one outside wall of a room to support a main roof only 20 inches thick, and the wall of the same room and exactly opposite to it to support the same roof 3 feet 6 inches thick.

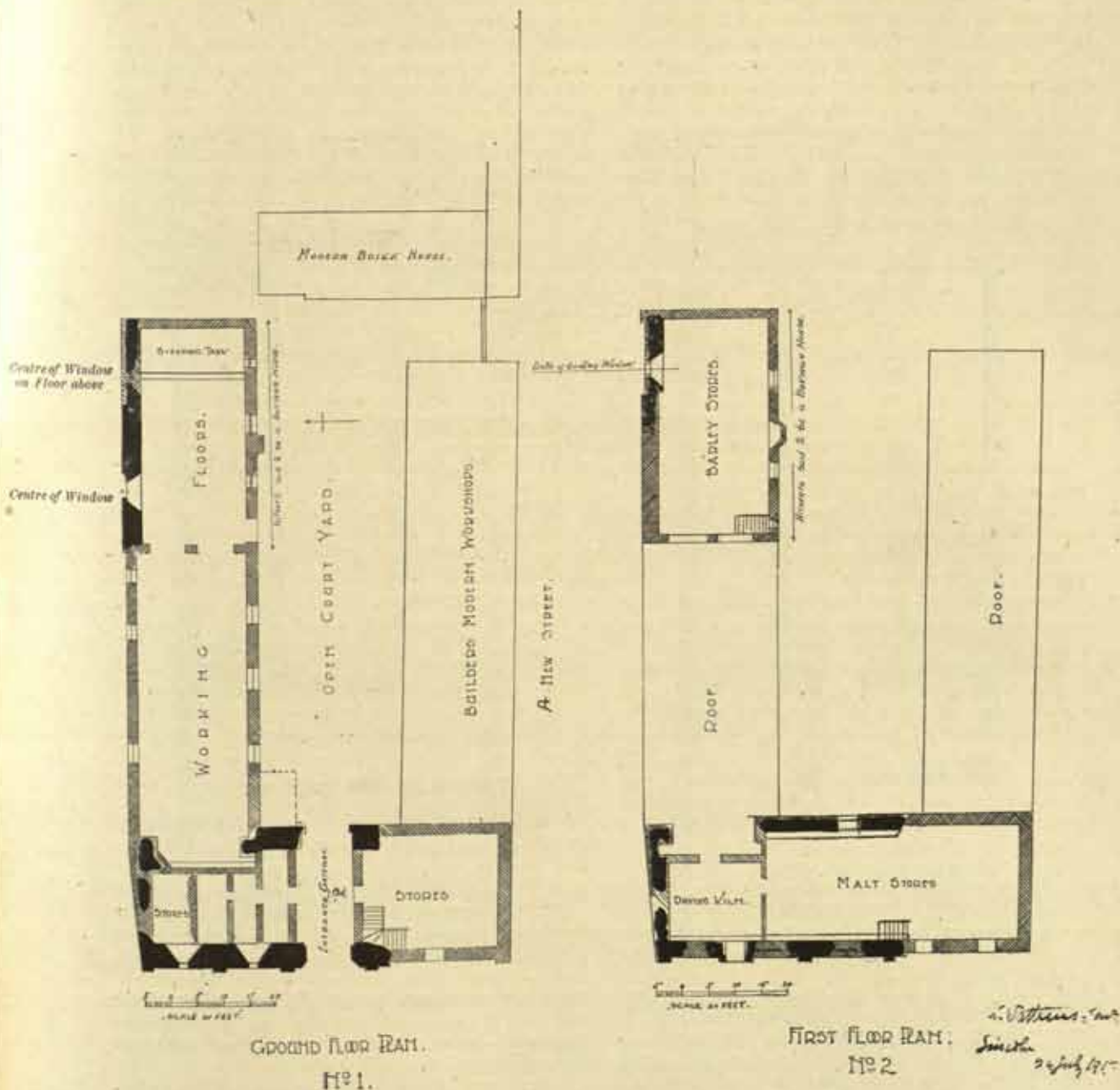
What I suggest therefore is that, owing to the Norman Conquest and the consequent increased activity in all matters relating to life and religion, and especially in the building of cathedrals, churches, and castles, as well as bridges, throughout the island, and particularly in this large diocese, together with the removal of the See from Dorchester to Lincoln which made the latter the centre of ecclesiastical energy, there was a great influx into Britain, and especially to Lincoln, of Norman builders, headed as they would be by architects as we term them now, but masters to design and superintend, and craftsmen to execute the works. Such an influx of foreign craftsmen all associated in one common fraternity or fellowship,

* Since this was written the remains of coupled gable windows have been discovered in the false roof above the drying room of the modern malt kiln.—W. W.

speaking a language different from that of the natives, and with associations and aspirations greatly varying from those of the people around them, would naturally seek a school of their own in which to study the arts and develop the

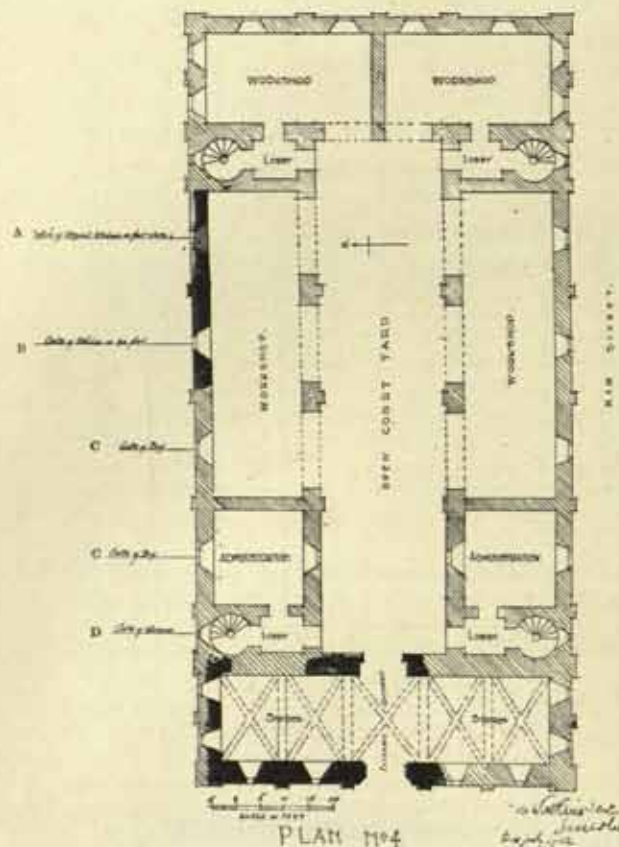
building fraternities in all nations and in all ages
from a remote period of time.

But it will not be supposed that the association would at once commence to build themselves a permanent school before they had well established



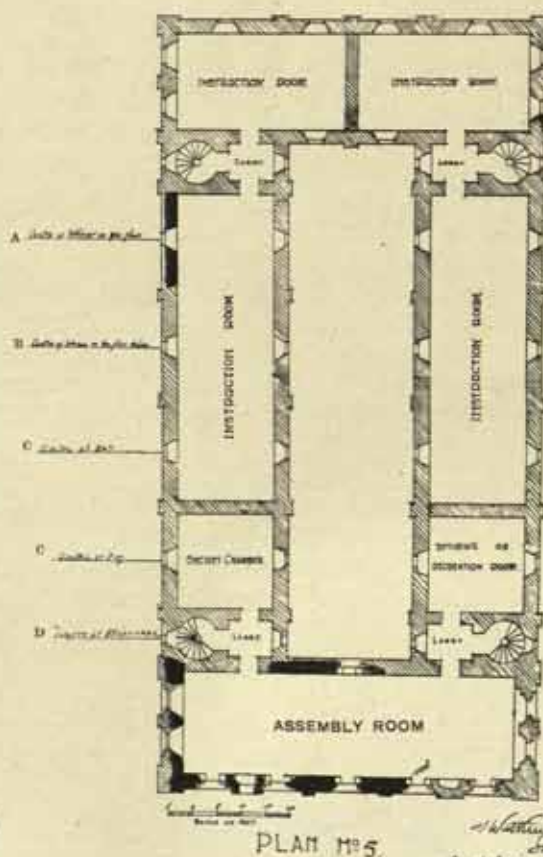
cathedrals, churches, castles, &c., was proceeded with almost immediately after the Norman Conquest, St. Mary's Guild building was not erected nor designed until nearly a hundred years afterwards. Neither will it be supposed that they would at once commence to build their training college, because, in the first place the newly imported architects and builders would for a long time be occupied in designing and erecting buildings for others, and, like every other institution of its kind

ample evidence that it was the common practice of these fraternities to build such wooden domiciles for themselves; the fabric rolls of several of our cathedrals still testify to this. But these wooden houses were built for the ordinary craftsmen to reside in, and not in substitution for the school. It is desirable to bear this distinction in mind, because there would be a domicile or lodge attached to every important building at the time of its erection, but there would be only one techni-



GROUND FLOOR PLAN.

- A, Centre of Original Windows on Floor above.
- B, Centre of Original Window on this Floor.
- C, Centre of Bay.
- D, Centre of Staircase.



FIRST FLOOR PLAN.

- A, Centre of Original Window on this Floor.
- B, Centre of this Window, over that of Original Window on Floor below.
- C, Centre of Bay.
- D, Centre of Staircase.

whether business or educational, they would wait and make sure of their position before incurring the heavy expense and responsibility the establishment of a new college for the craft would entail upon them. The newly imported architects and craftsmen would no doubt at first be not only destitute of a school building and workshops, but probably of students also; and the craftsmen's dwellings would only be temporary wooden huts, erected on the sites of the structures upon which they were engaged. There is, in fact,

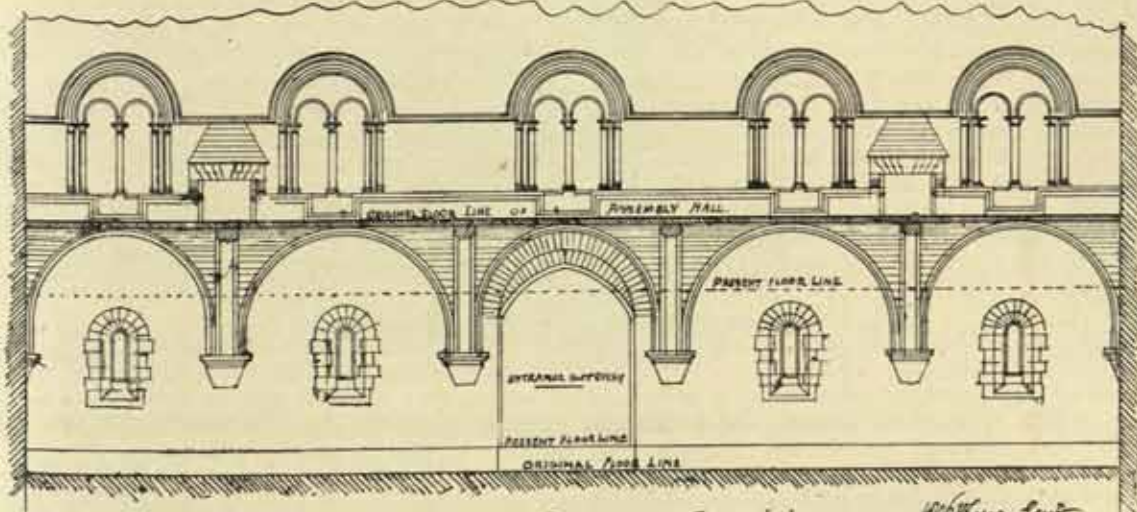
cal school or college in each diocese, and probably only one in the island, and that one would be the college of instruction for the combined Arts and Crafts Fraternity.

I am persuaded that the members of the fraternity were a secret and exclusive body, whose private inner workings and instructions were entirely oral, that no written records of the crafts and the arts they practised, nor of the social or fraternal intercourse they kept up amongst themselves, were ever made, and that none therefore

could come down to us; hence the mystery which hangs over their early practices in this country, especially through the mediæval period of art. But the circumstantial evidence is so strong and complete respecting them, and ranges over so

shown by quotations from their writings; and this the progress of the arts and evolution of the styles in the buildings, which were alike in general forms and in details in all parts of the country at the same time, undoubtedly testify. Hence, as the

ST MARY'S GUILD LINCOLN.

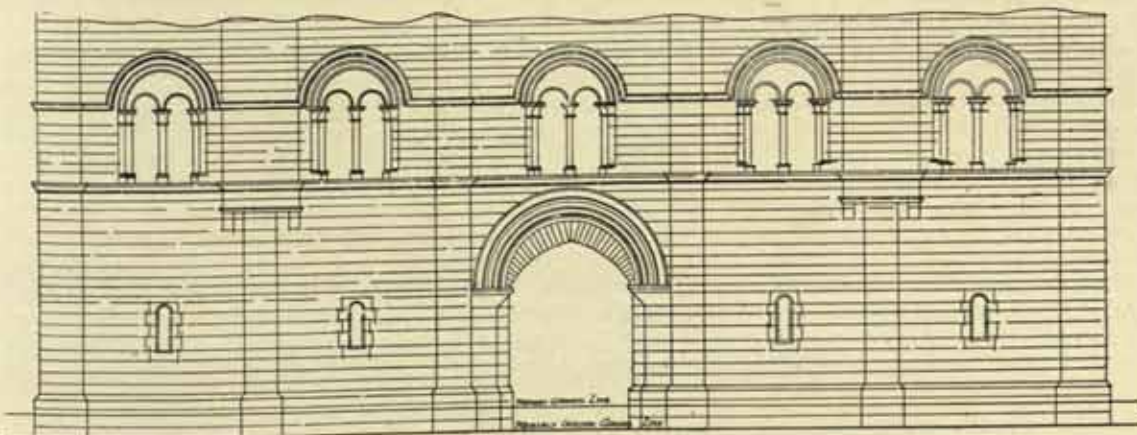


INFERENTIAL LONGITUDINAL SECTION OF FRONT WING.

SCALE OF FEET.

Nº 6

W. H. Smith
24 July 1912



INFERENTIAL FRONT ELEVATION

Nº 7

SCALE OF FEET.

W. H. Smith
24 July 1912

ST. MARY'S GUILD, LINCOLN.

many centuries, that, like similar evidence in suits at law when complete in all its bearings, it becomes, as our lawyers tell us, the most reliable evidence of all. That there was a National School of the Arts and Crafts has been the opinion of all our best experts on the subject, as I have already

Arts and Crafts fraternity was always in close alliance with the Church, and worked under special privileges and probably monopolies from the Popes, and as Lincoln was the largest English diocese all through the mediæval period, it does not seem unreasonable to suppose that it was the recognised

home and centre of the National Arts and Crafts, and that St. Mary's Guild building was the school and workshops of the fraternity.

It may, however, be said that this was one of the numerous religious guilds established in and around the city about that time. But there is nothing remaining about these buildings that could in any way suggest such a guild, and, besides this, we have it on the authority of Dr. Sympton in his *History of Lincoln* that there was another St. Mary's Guild or hospital governed by a Prior, but its situation, says the Doctor, is not now known. Moreover, it is not likely that there would be two religious guilds named St. Mary existing in one city at the same time, although there may have been one religious and one Arts and Crafts Guild both dedicated to the same saint.

Others, again, may say that this was an ordinary trade or merchants' guild entirely distinct from any Arts and Crafts Society. But what other trade was there about 1140 to 1150 so important and wealthy in this city as would have enabled the fraternity to erect such a building as this? The staple or wool trade was not established in Lincoln before 1291, or nearly a hundred and fifty years after this building was erected. Others may say that it was built by the civic authorities and that it was the stoneyard and workshops of the City Fathers. But I am under the impression that the Civic Guilds were not founded till two hundred years after this building was erected. That it may, however, have come into the hands of the civic authorities at a later period is by no means impossible, for as the original Arts and Crafts Guild received great favours from the Church, as well as a monopoly for their trade and calling of ecclesiastical work at least, so they are said to have excited the jealousy of the civic authorities, who in their turn founded Civic Guilds on the basis of those of the earlier Arts and Crafts, and eventually absorbed the latter into their own society.

The accompanying plans and elevations will probably aid the explanations I have endeavoured to give in support of my suggestion.

No. 1 is an outline ground floor plan of the existing buildings.

No. 2 is the first floor plan.

No. 3 (*see* headpiece) is the front elevation of existing building.

No. 4 is a ground floor plan of the original building as inferred from the remains still visible to those who will trouble to make the necessary examination of the present buildings, the old walls being blacked in, and the positions of the only remaining original windows indicated thereon.

No. 5 is the first floor plan of the original buildings, as inferred, and blacked in in the same way as those of the ground floor.

No. 6 is a longitudinal section through the centre of the front wing, looking towards the street, showing the original windows, and the vaulting below, which supported the assembly room floor.

No. 7 is the front elevation next the High Street as it probably existed from the ground line upwards to just above the assembly room windows. How the front was finished above these windows, it is now impossible to say.

Under the circumstances I have related, and taking into consideration the accompanying plans, together with the fact that there certainly was, somewhere in Britain, a native School of Arts and Crafts from soon after the Norman Conquest onwards to the commencement of the decline of the arts in architecture some four hundred years ago, and that up to the present time its whereabouts has never yet been defined, at least so far as I am aware; and further that the buildings of St. Mary's Guild were in plan and detail in every way suitable for such a school and workshops, and that the period of their erection entirely accords with all the circumstantial evidence surrounding them; I am emboldened to suggest that Lincoln was the place, and St. Mary's Guild the building, in which the arts and crafts were taught for several centuries.

I place this statement before the readers of the JOURNAL with some trepidation, but with the full confidence that those interested in the subject will give it a fair and reasonable consideration, and if the conclusions to which I have found myself forced should be proved to be wrong, I shall not be slow to admit it, for my only desire in this matter is to settle, if possible, a vexed question of many years' standing.





Queen Victoria Monument, Ottawa.

CANADIAN ARCHITECTURE.

By F. S. BAKER [F.], of Toronto, Past-President of the Royal Architectural Institute of Canada, Hon. Secretary R.I.B.A. for Canada.

Read before the Royal Institute of British Architects, Monday, 20th January 1913.

THE invitation of your Council to read a Paper on Canadian Architecture at this meeting is an honour which I have accepted with much pleasure, and while I am afraid that I shall expose the poverty of Canada in the matter of good architecture, I am still more afraid that my inability to impart to you properly what is in my mind will bring my country into discredit. I ask you to accept this Paper as being contributed in my capacity as a member of this Institute, and not in any official capacity as a member of the Canadian Institute or as representing any Government or interest. My love for my native land must be my excuse if I overstep the bounds of good taste in my efforts to show that what has been done is not all futile and void of interest. Please bear in mind that the boundaries of Canada were established only sixty-six years ago, and that it is only forty-six years since the confederation of the Provinces and the completion of the Parliament Buildings.

Before I speak of Canadian Architecture, the subject of my Paper, I would like, with your permission, to say a few words about the general conditions which surround the profession of architects in Canada.

As in England, the system of "pupilage," but without fees, is the most common commencement for the would-be architect. In four of the Provinces—Quebec, Manitoba, Saskatchewan, and Alberta—the title "architect" is protected by law, and no one may call himself an architect unless he has complied with the law, and qualified by passing certain examinations prescribed by the Act. A fifth Province—Ontario—also has an Act, but, owing to the insertion of the word "Registered" before "architect" by the Government of the day, it has no effect, and anyone who pleases may call himself "architect." The remaining Provinces are all organising with a view to obtaining legislation similar to that in force in the four Provinces

above named. In all of these four Provinces the degree of Associate R.I.B.A. is accepted as a satisfactory qualification for admission to membership at present—and here I may say that the Royal Institute of British Architects is held in very high esteem throughout the Dominion. The Universities of these Provinces, including Ontario, have special courses in architecture and issue degrees. The best of these is at McGill, in Montreal, which Mr. Capper and Mr. Nobbs have largely helped to its present condition of efficiency.

The number of students entering the profession is as yet very small, and architects have to rely upon the British Isles and the United States for skilled assistants. I do not recall a time in the past ten years when there were more than enough.

Owing to the fact that in Canada the builder takes out his own quantities, drawings have to be made very complete, and this has tended to raise the quality of draughtsmanship throughout the country, and, incidentally, gives the student a chance to learn details of the work which an English student does not come in contact with. If this can be said in favour of the lack of quantities, the opposite must be said in the difficulties occasioned the practising architect in dealing with builders, owing to the lack of the system in vogue in England.

At present there are no travelling scholarships in architecture, and the necessity for these is becoming more and more apparent. Private "ateliers," in which practising architects of the younger school mostly are patrons, are available for the students in many of the large towns during the winter.

It has been said that "the next fifty years will decide the character and type of Canadian architecture," but, having regard to the extreme youth of the country, such an event would seem to be most unfortunate, and I for one would like to feel that the students of fifty years hence will have something to strive for in creating a greater excellence than the art will then have reached in Canada. It should be said, however, that the Classic orders are fairly well understood, the value of proportion appreciated, and the application of ornament and mouldings handled in a conservative way.

The climate, of course, has a great deal to do with the nature of the buildings in the various parts of Canada. A country which extends for thirty-five hundred miles must, of course, show considerable variation in that respect. There are the Eastern Provinces, tempered on the coast by the Atlantic Ocean; the Province of Ontario, which is affected by the great lakes; a long stretch between Lake Winnipeg and the Western Coast in which no large lakes exist; and the Province of British Columbia, the climate of which is also tempered by the Pacific Ocean along the coast. It is possible at the same hour, therefore, to have a temperature in mid-winter of, say, forty-five degrees at Halifax, ten degrees below zero at Montreal, twenty degrees at Toronto, twenty degrees below zero at Winnipeg, and forty-five degrees at Victoria. Halifax would be without snow, Montreal would probably have three feet, Toronto fifteen inches, Winnipeg two feet, and Victoria none. In mid-summer these figures would be reversed; the two sea-coast cities and Toronto remain cooler, while Montreal and Winnipeg suffer from extreme heat. Throughout all the months of the year over the whole country there is a wealth of sunshine and bright skies. All of these districts are subject to severe snow blizzards, and in the summer to terrific wind-storms. It will thus be seen that provision must be made by the architect against extreme cold, with accumulations of snow and ice, and extreme heat, conditions of extreme moisture and extreme drought, of the most brilliant sunshine and dull days, of perfect calm, and wind storms which often reach the proportions of cyclones. Up to this time Canada has not suffered from earthquake to any extent, although shocks have been felt in nearly all parts, and every architect in erecting a building takes into his calculations the possibility of an earthquake occurring. The general character of sub-soils is such as to insure a good foundation, a stratum of stiff clay occurring in most parts before the rock is reached. There are,

of course, many localities which are exceptions to this rule and where special precautions have to be taken.

You will be interested, perhaps, to hear something regarding the building material obtainable throughout Canada. Splendid marbles are now procurable suitable for almost any purpose, and I shall not be surprised if when these quarries are fully opened marbles will be found to equal any which have been produced on the continent of Europe. Building stones are only fairly good, and much stone for face work is imported. It may be, however, that the opening of new districts by the building of railways will overcome this difficulty. In the eastern part



ADMINISTRATION BUILDING, PARLIAMENT BUILDINGS, OTTAWA. (Mr. Thomas Fuller, Architect.)
 (Photo. D. A. McLaughlin.)

of the country very fine granite is obtained, and also in Central Ontario. Good limestones are quarried in the Eastern Provinces and throughout Ontario, and in many parts of the West.

The Portland cement produced in Canada is excellent; everywhere fine grit sand is obtainable, and good limes are burnt in nearly all districts. Canadian bricks are well known for their excellence, but the production of terra-cotta, other than hollow blocks, for fireproof construction work is limited. Steel sections are rolled from Canadian ore in nearly all the large centres, but an enormous quantity of structural steel is imported from the United States, Great Britain, and Germany. Castings in metal of good quality are easily obtainable. Canadian woods are well known; white pine, red pine and spruce, white and red oak, birch, maple, walnut,

cherry, butternut, white-wood, and cedar are the commonest varieties. Wood of all kinds is becoming more and more difficult to obtain, and the price is advancing, with the result that what is known as "fireproof construction" is becoming more and more popular. Sheet metal, galvanised iron, and copper are almost entirely imported. Sheet lead is, of course, scarcely used for flashing purposes, owing to the large range of temperature which prevails. Paints and oils are produced on a large scale and of excellent quality, but the high grades of glass are as yet mostly imported. Sanitary pipes and fittings, as well as fixtures, are manufactured, but a large quantity is also imported, especially porcelain fixtures, which come from Great Britain and the United States. Gas and electric pipes, fittings, and fixtures, with all kinds of glassware, are made in most localities. Tiles are not produced in Canada in any quantity, but are largely imported from Great Britain, the United States, and Holland.

All the large centres are provided with stringent building laws, plans are passed by building departments, whose inspectors issue permits before the work is allowed to be proceeded with.



OSGOODE HALL (THE LAW COURTS), TORONTO.

[Photo. Pringle & Booth.]

Constant inspection is also made of the work during its progress by these departments. This system extends to construction and sanitation, and the relation of buildings to localities, but does not in any way interfere with the architectural or artistic qualities of the building. That the duties of these departments may be extended in the near future so as to criticise the quality of the design is not an improbability. The fact that every city is giving careful attention to town-planning, driveways, park systems, and suburbs is having an excellent moral effect in the development of the artistic tastes of the people.

Most of you will have read an article which appeared recently in a London architectural paper, entitled "Imperialism and Architecture," and as a strong reference is made to Canada I may perhaps be permitted to refer to it. It states that U.S. American "ideals and methods of expression" are being appropriated by Canadians, and that "in Vancouver, Toronto, and Montreal the largest and handsomest buildings are the works of American architects." With regard to the first statement, there is not the slightest doubt that Canadian architects have been experimenting along U.S. American lines in the designs of all classes of buildings. I can say

definitely, however, that American ideals and methods of expression are not being adopted any more than those of any other country, except in so far as they apply more conveniently to conditions in Canada. In the matter of design, I believe I am right in saying that the British influence is much the strongest one affecting Canadian architects, who, generally speaking,



POST OFFICE, VANCOUVER, B.C. (Mr. J. H. Ewart, Ottawa, Architect.)

are strong Imperialists. The other statement is, of course, misleading. I know of only two large buildings in Montreal which have been erected in the last twenty years under U.S. American architects. In Toronto, strange as it may seem, the Anglican Cathedral of St. Alban is the only building I know of which is in the hands of a U.S. American architect. Winnipeg has one bank and one railway terminal designed by New York architects. Vancouver may

have a building which has been designed by a U.S. American architect, but I am not aware of its identity. There is no reciprocity between the architects of the United States and Canada, and both are subjected to practically prohibitive Customs tariffs. In the above I do not include architects who have permanent offices in Canada as well as in New York; but if they were included, and I say it with all modesty, the works of Canadian architects would far away surpass those few buildings which have been erected by foreign architects. Canadian statesmen, benefiting by past experiences of Great Britain and other nations, have taken precautions which make it practically impossible for foreigners to exploit the opportunities which Canada presents in any way except that which will most benefit Canada. Thus it is that many manufacturers of building materials residing in foreign countries and wishing to avail themselves of the Canadian market have found it desirable to establish factories in Canada.



HOME FOR INCURABLES, TORONTO. (Messrs. Darling & Pearson, Architects.)

But it is to talk to you of what has been done rather than what the future may hold that I am here, and to simplify matters I will classify the various kinds of buildings and endeavour to describe to you the problem met in each.

There are, of course, the Federal Government Buildings at Ottawa, as well as the buildings which house the Provincial Legislatures in each Province. The Ottawa buildings were completed in 1866, but have been largely added to since. Built of local stone, rock-faced ashlar, with jambs and quoins of cut stone, these are called "Victorian Gothic." They are only partly of fireproof construction. The central block contains both the House of Commons and the Senate and the rooms incidental thereto. The library, a circular building, finished throughout the interior in white pine in natural finish, is interesting and rather elaborately carved. The various departments are housed in separate buildings, of which there are now a large number. These are practically all built of local stone, and are, without exception, almost devoid of architectural interest. Each has its own heating, lighting, and ventilating plant. Large blocks of further departmental buildings are under consideration, for which a competition amongst Canadian architects was held, and prizes awarded.

Of the Provincial buildings, that recently completed at Victoria is perhaps the most notable. This design was also the result of a properly conducted competition amongst Canadian architects.

The City Hall, or Municipal Building, has not risen to any great height as an architectural creation. The buildings at Toronto are of interest, because built in a sort of Romanesque style of a beautiful dark brown local stone, the supply of which has unfortunately become exhausted. As in England, these buildings contain the Council Chamber, Mayor's office, offices for the various departments, and in some cases, especially in the smaller towns, a large assembly hall for public meetings. Island sites are nearly always obtained for these buildings, and in many towns these are also occupied by an open-air farmers' market.

The Post Offices throughout the country are rather a better class of building. They are, of course, built and controlled by the Dominion Government, and contain, in addition to the



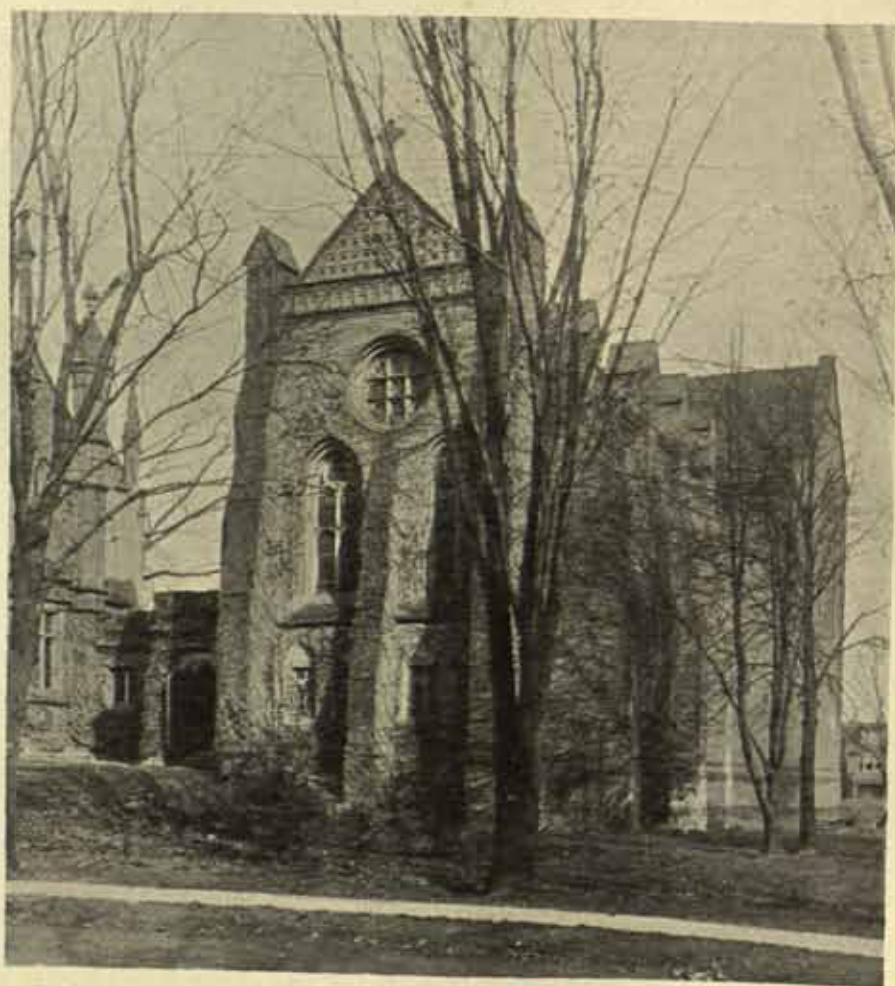
PUBLIC LIBRARY, TORONTO. (Messrs. Wickson, Gregg, & Chapman, Architects.)

general office for the reception and distribution of mails, the offices of the departments connected with this work. In the smaller towns the Collector of Customs also has his offices in the Post Office buildings, which of later years are all of fireproof construction.

Of the Law Courts and Court Houses the most notable building is undoubtedly that at Toronto known as Osgoode Hall, the main block of which is a most interesting building, both externally and internally, and a charming bit of architecture. It contains, of course, the court-rooms used by the various higher courts, with the necessary offices and an extensive law library. The interior central hall is a delightful piece of rather delicate Renaissance work, executed in real Caen stone. Unfortunately this building is not fireproof, and many valuable possessions contained therein are undoubtedly exposed to great danger.

Canada has many splendid hospitals, large and small, and there is perhaps no other type of building to which so much study has been given by architects. The site is carefully selected and the sub-soils disinfected and drained. In the construction of the buildings precaution is

taken against fire, extremes of heat and cold, moisture and the lack thereof, obtrusive forms and projections, foul airs and too much draught, everything which is unsanitary or unpleasant, everything which is superfluous or increases work, undue proximity to wards, and unpleasant surroundings for nurses off duty. There is no notable example; architectural effect is secondary to those essential things which I have enumerated, and many others. Suffice it to say that a Canadian architect asked to build a hospital places it in importance above any other building that he has in charge.

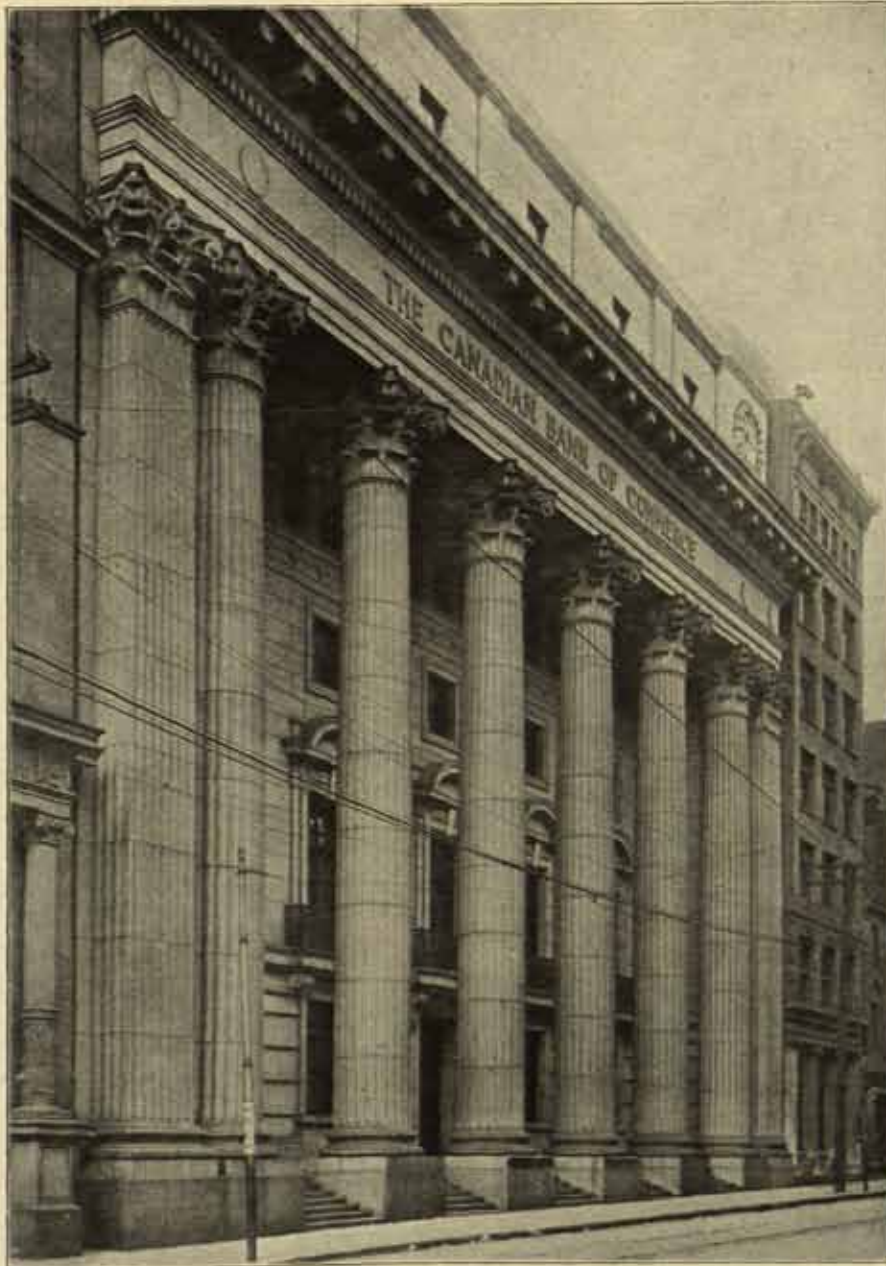


CHAPEL, TRINITY COLLEGE, TORONTO. (Messrs. Darling & Pearson, Toronto, Architects.)

Of the homes for orphans and aged or incurable people too much cannot be said, as the buildings are invariably excellent and splendidly managed; they are maintained by public subscription and Government grant. As these are generally built in the early stages of the growth of a town on sites of large area, the increase in the value of the site produces a fund which is often sufficient eventually for the support of the institution.

The public library in Canada has not received nearly so much consideration, although every community of above a thousand people has one. Well lighted and well ventilated reading rooms, economical stack rooms, and provision for issuing and receiving the books, with every possible precaution against fire, are, as in England, the main essentials.

Art galleries and museums, I am sorry to say, are few in number, and are only to be found in the larger cities. The reason of this is the lack of art collections rather than the want of buildings, and it seems to me to be exceedingly desirable that the opportunity to obtain



THE CANADIAN BANK OF COMMERCE, MONTREAL. (Messrs. Darling & Pearson, Architects.)

replicas of the splendid collections in the British Isles should be provided and every facility possible to obtain these reproductions given to the representatives of the various parts of the Empire in which original collections cannot be hoped for. Architectural students are suffering particularly in this respect in Canada. Those buildings which have been built are, of course,

of fireproof construction, and are fairly pretentious, both as regards size and architecture. There is no doubt that many museums and art galleries will be built in the future.

It is most unfortunate that in nearly every case Canadian churches have been carried out with such rapidity that a great paucity of church architecture is the result. This has also been caused partly by the limited sums of money at the disposal of the various congregations. I regret to say that I have found it difficult to select a large church from which a slide could be made which could be shown you without apology, although there are many large churches in each of the hundred-mile stretches of the length of Canada. These are mostly of brick, and all have wooden roofs. Amongst the small churches, I am glad to say, a better condition of affairs exists, and there are many small churches built of stone which are quite interesting. These, however, like the larger ones, show evidence of haste and lack of any great care in their design.

Canadian shops are, generally speaking, of a fairly high class, and show a good deal of skill in their planning and arrangement. In contra-distinction to the English custom, the authorities in Canada permit huge shops to be erected as one room to each floor, and the effect of this in the large stores, with their wealth of stock, is bewildering. The newest of these shops are, of course, of fireproof construction, and are fitted with automatic sprinkler installations, and every other known precaution against fire is taken, with the result that up to this time no serious catastrophe has occurred, although in the large cities these buildings are thronged from morning till night with crowds of shoppers. They are ingeniously planned for receiving and sending out goods, fitted with devices for handling parcels, and for conveying money payments to a central office and the return of the change and bill. Each has a palatial restaurant, and is fitted with numerous elevators, moving staircases, &c. Most of them have central courts, with top light and galleries. Carrying as they do almost every class of article which may be sold, they practically become an industrial exhibition. For this reason, on account of the vast throngs of people which visit them, the greatest care is taken in their design and construction, arrangement of ingress and egress, &c. They are cleaned, in most cases, by vacuum process, and in most ways are an example to the occupants of other buildings.

The small shop, although it may have a very interesting façade, architecturally speaking, need not be mentioned, for the reason that its owner or tenant almost invariably covers the exterior of it with signs, plain and illuminated, by way of advertising. This is carried, perhaps, to as great an extent in Canada as in any other country, and has a most unfortunate effect upon the streets of the various towns.

The wholesale warehouse is a very distinct type of building, and is usually a fine structure. Lately these have been built of fireproof construction, reinforced concrete, or steel frame with tile or concrete casing. Most of them are fitted with automatic sprinkler installations and every other known method of preventing fire. In this way the cost of insurance on buildings and their contents has been reduced to a nominal sum, even in the most congested districts of the large cities. All staircases and elevators are enclosed within masonry walls, with metal-covered doors; the window-frames and sashes are of metal, and are glazed with wired glass. In addition to this, automatic fire-shutters are frequently used. Automatic fire-doors are placed on all communicating doors, with metal or stone sills. Fire walls are carried up at least three feet above the roof, and cornices or other projections containing combustible material are not permitted. The actual floors are often of concrete or composition, but are frequently of maple or Georgia pine on sleepers bedded in the concrete. Electric wiring is placed in an armoured conduit, and all boiler-rooms made absolutely fireproof. These floors, like the large stores, are also in single lofts, unless subdivision is desired by the owner. There are also a large number of warehouses built in what is known as slow-burning or mill construction, in which no hidden

spaces through which fire can gain headway are permitted. In these the posts are of wood placed rather close together with a wooden beam stretching between them and to the walls, on which is laid a flooring of 4-inch Georgia pine joined with oak splines, and having a finished floor of maple or Georgia pine. In these buildings the same precautions are taken as enumerated above for the prevention of fire.

Perhaps the most ornamental buildings throughout Canada are the banks and their branches. Generally speaking, these have been designed and built with considerable care, and



(Photo. W. G. Gillespie.)

TRADE'S BANK OF CANADA, SUDBURY, ONT. (F. S. Baker, Toronto, Architect.)

without any curtailment of expense. As there are some thirty chartered banks in Canada, and as many of them have upwards of three hundred branches each, it will be seen that bank buildings are fairly frequent. The head offices of these banks are in some cases buildings which house the bank and its departments only, and in others they house the banks and its departments, and are carried up to a great height with a number of floors of offices for renting purposes. They usually contain the general banking room, a savings-bank department, and a banking department for ladies, ample security and book vaults, the entrance doors to which are really marvellous pieces of construction, some being as much as 12 inches thick of chrome steel, with a clockwork device on the combination lock which can only be operated by two persons. The

security vault itself is frequently constructed with a chrome steel lining 3 inches thick, enclosed in heavy masonry walls. The bank places in these security vaults steel safes with combination locks, which in themselves would seem to offer sufficient security against burglars, as they also would against fire.

These buildings also contain the head office departments of the bank, which, having so many branches, requires a large space. In this space is provided a board room for the directors' meetings, and the rooms for officers, &c. Off the board-room is usually placed an incinerator or macerator, used for the destruction of worn banknotes, which process is, of course, supervised by the directors personally. The designing of these banks has brought out perhaps more good architecture than any other type of building in the country, as so much work of a high class is involved. First, there is the banking room, which is usually very large, and may be treated in any way that the architect may select—wall surfaces of Canadian marble, or of imitation Caen stone, or of plaster, with a pilaster or column treatment in the same material, and an elaborate entablature, with vaulted or panelled ceilings all profusely ornamented. There is little or no woodwork, except doors. The floors and counters are of marble, with metal grille-work of a very high class, and often of beautiful design. Marble cheque desks, benches, and other furniture certainly give scope to the good designer. The board-room, also, and the general manager's private apartments, and the approaches thereto, with the general approaches to the building, give the architect a further opportunity to show his ability, and as the sites chosen by the banks for their head-office buildings are generally the most prominent in the various cities, there is no limit to the extent to which the design may go in producing a building which it is expected will be a credit to the owners and to the city in which it is built. Needless to say, Canadian architects have had to resort to the five Classic orders in designing these buildings, and no exception to this occurs to me at the moment. In heating, ventilation, sanitation, and lighting no expense is spared. The engine-rooms of these buildings are often as elaborately finished as the prominent rooms of many important buildings. Although the majority of the banks provide space for the public in the centre of the banking room, in some of them the clerks are placed in the centre of the room and the public around the sides; invariably the owners provide restaurants in these buildings for the convenience of their clerks.

Branch banks are also generally arranged with a separate banking room for ladies, and are fitted with sleeping and living rooms for clerks, so that the life of a bank clerk in a small outlying town may be quite comfortable.

The office building in Canada varies in size from four to eighteen floors of renting spaces. These are frequently built by financial corporations, such as insurance companies, loan companies, banks, &c., and are invariably of fireproof construction. Perhaps the most notable building of this type which has been erected in Canada is that of the Canadian Pacific Railway Company in Toronto. It has a steel frame which is fireproofed with hollow terra-cotta, a base of three stories of Canadian granite, and a superstructure of fifteen stories of glazed cream-coloured terra-cotta on the four sides, and a rather agreeable scheme of fenestration. The elevators, five in number, are plunger hydraulic, water pressure being obtained from steam-driven pumps, fitted, with the rest of the power plant, in a sub-basement of the building. The staircase, which is secondary in size, owing to the number of elevators, is of steel, cast iron, and marble. The floors throughout are finished in concrete terrazzo or marble or tile mosaic. There are no wooden floors. All partitions, except glazed partitions, are of hollow terra-cotta block, and the trim, doors, transoms, &c., are exceedingly simple. A mail chute, with a drop-letter appliance at each floor, is provided. Each office has hot and cold running water and a vacuum-cleaning connection; filtered drinking water is provided, and clocks are operated and regulated by electricity. The roof is so finished as to be convenient for visitors to obtain

from this point an extensive view of the city and over the harbour and lake. Based on the experience of other large buildings, it is expected that the elevators of this building will carry nearly ten thousand people every week-day, and that the building will have more than a thousand occupants. All of these will be working in good sanitary conditions, better, indeed, than would be found in a building of four stories or less in height. The collecting of so much traffic at one point must have some effect upon the traffic in the streets, but, while the streets at this point are not wide, it is not anticipated that this will be noticeable. These buildings are not equipped with sprinkler appliances, but with standpipe and hose, and a fire-pump upon which steam is always kept for the purpose of producing the pressure necessary to extend the water to the upper stories of the building. There is also an outside staircase or fire escape. In these buildings the rent is calculated by the square foot of floor-space actually leased to the tenant, and generally includes heating, lighting, cleaning, vault, hot and cold water, electric



McGILL UNIVERSITY, MEDICAL BUILDING, ELEVATION TO CAMPUS.
(Messrs. Brown & Valance, Montreal, Architects.)

fans, window curtains, and wall decoration, in addition to elevator service and a card in the general index at the entrance.

Canada has many large hotels, and a much larger number of small ones. In their construction and equipment they are similar to office buildings which I have described, but are, of course, finished for semi-domestic use. Large restaurant space is generally their main feature, apart, of course, from sleeping-rooms. The modern ones are all fireproof and have marble or concrete floors. The latter are arranged in bedrooms with wood strips around the walls, to which carpets are fixed. There are bathrooms for all bedrooms, and dressing-gowns are superfluous. Hotel architecture all the world over is rather florid, and Canadian managers are no exception to those who want elaborate and showy ornamentation at every possible point in the public space, and this invariably disappoints the visiting architect. The use of imitation Caen stone has created an agreeable diversion in some notable instances, and too much cannot be said for the good taste shown in the decorations and furnishings of the bedroom. Vacuum cleaning has been a great boom to hotel managers.

The last few years have seen the construction of a great many railway stations. These are mostly of the terminal type, with a large cross platform or concourse between the waiting-rooms, offices, &c., and the train sheds. Fireproof construction and concrete have entirely replaced wood.

Considerable improvement has recently been shown in the designing of theatres and public halls, and the use of fireproof construction has added greatly to the safety of these buildings. The Canadian theatre is much like the English one, with its stalls, and pit, and boxes, and always two, sometimes three, galleries. Cantilever construction has been adopted where possible for the support of galleries, and posts have been eliminated. Heating and ventilating have been arranged with care. Indirect heating by fresh air taken from above the roof and



LIBRARY, SIR EDMOND OSLEW'S RESIDENCE, TORONTO. (Messrs. Darling & Pearson, Architects.)

passed over superheated steam coils in a small chamber in the basement, and delivered through a small aperture under each chair in the orchestra and pit, with a sufficient amount of direct radiation to insure ample warmth, is the usual method. For the summer season the heating chamber in the basement contains cold storage coils, and the fresh air from above the roof is forced over these, and this cooled air is emitted through the small aperture by which heat is emitted in winter; of course, equivalent provision for the escape of foul air and superheated air is provided. All theatres are required to have asbestos fire-curtains, and a fireman is on duty at every performance. As the theatres are built by private interests, and are proverbially poor money-makers, there is a tendency to make the construction of the building as inexpensive as possible, and cheap architecture is frequently the result.

Canada is well provided with educational buildings of every class. The Universities of



RESIDENCE OF COLONEL SWEENEY, TORONTO. (Messrs. Darling & Pearson, Toronto, Architects.)



RESIDENCE OF MR. J. W. FLAVELLE, TORONTO. (Messrs. Darling & Pearson, Toronto, Architects.)

Montreal and Toronto are well equipped with buildings; these are mostly of stone, and many of them are very good examples of architecture. While I should like to have introduced many slides illustrating these buildings, it has been, of course, impossible in the time at my disposal; indeed, I fear this Paper has already occupied too much time, but numerous photographs of these University buildings will be found hanging on the walls of the gallery, if any care to see them. The same applies to the colleges, which, being conducted largely on the English system and nearly always controlled by English masters, are doing a great work in strengthening the already universal Imperialistic spirit in Canada.

Technical schools of the very highest class have now been provided in all the large cities; these have only been undertaken after the most careful study by the authorities, accompanied by their architect, of the best schools in Europe and the United States, and even to walk through one of these institutions in a leisurely way is most instructive for the architectural student.

Common schools are at last being fireproofed, but I regret to say that the great majority of these large buildings, extending in many cases to three stories, and even to four stories, are dangerous fire-traps. Pupils are carefully trained in fire-drill, with a view to their hurried escape in case of alarm, but in several instances—fortunately not many—loss of life has occurred through the burning of the buildings. In the modern school building unilateral lighting from the left side has been adopted, and the greatest attention is given to heating and ventilating. That a satisfactory system of moistening the internal atmosphere of our schools, hospitals, &c., has not yet been discovered is to be regretted, but no doubt it is one of the improvements of the near future. The result of a child leaving an overheated atmosphere containing not more than 25 per cent. of moisture, under which condition the mucous membrane is, of course, sadly depleted, and entering an external atmosphere at a very much lower temperature which contains 75 per cent. of moisture, can easily be imagined.

I come now to the dwellings of the people, upon which subject a whole Paper could easily be written, but regarding which I shall only be able to say a little. It is in these that the individual taste and character of the people are indicated. I am bound to say that they are most creditable, and must favourably impress the visitor from other countries. Curiously enough, although Canada is a wood country, wooden houses do not predominate; they are mostly of brick or stucco. Many of those which are apparently brick have a wood frame, with a brick veneering of the thickness of half a brick, and this type of house is a very wholesome and satisfactory one. I should think the commonest type of house in the towns is what is known as the semi-detached house—two houses under one roof—having three sides exposed. It is true the space between the pairs of houses is often not more than three feet, but this provides for the entrance of light and air, and is a distinct improvement on the long terraces of attached houses. The amplification of drainage systems has made it possible for even the smallest house to have proper sanitary arrangements, and it has recently been proposed, in one city at least, that a by-law should be provided to require every house to have a bath. An arrangement is suggested whereby the cost is advanced to the owner of the house and paid back by him in instalments. Undue overcrowding of tenements is prevented by the careful inspection of the authorities. All houses in the large towns in which any contagious disease exists are placarded and the occupants quarantined. The houses of the middle and wealthy classes throughout all the Provinces, including even Quebec, are more like the houses of Great Britain in type than those of any other country. The house which costs, say, \$15,000 is built of solid brick, with good, heavy walls, and a considerable amount of stone trimming. It will have stone steps, tiled entrance-hall, and main staircase, library or reception rooms, living-room or drawing-room, dining-room, and comfortable, lockered serving-pantry, with a sink, which forms a passage from dining-room to kitchen. The kitchen contains a range, generally gas, sometimes gas and

coal, the principal sink, and a ventilating device for removing kitchen smells. Off this kitchen is a good-sized pantry, containing a refrigerator, which is kept supplied with ice from day to day by a public company, and this ice is generally put in through a small door from the outside. The pantry is fitted with lockers, and generally with a marble-topped table for the use of the cook. There is also a maids' sitting-room, and off this a small porch or verandah is generally provided for the use of the maids in the summer. A large verandah, part or all of which is frequently enclosed with glass, for use in the winter, is extended generally towards the south, and opening off the living-room, for the use of the family. As can be imagined, a large part of the summer days is spent by the family upon these verandahs. The main staircase is always of ample size, and is sometimes continued to the top story. There is also a separate maids' staircase, leading from the basement to the top story, with a landing arranged to be lowered to ground level whereby easy access is obtained by tradesmen, &c., to the cellar and to the house; this stair, of course, is smaller, but winders are tabooed by general consent, although I think they should be by law.

Such a house would have in all six or seven bedrooms and dressing-rooms, and two bathrooms at least, one of which would have tiled walls and floors and an electric dryer. Each bedroom is provided with one or more built-in wardrobes or clothes cupboards. In many cases basins, with hot and cold water, are placed in the principal bedrooms. A combination linen and sewing room, with electric iron and ironing board, would also be arranged, and not unlikely a small dumb-waiter extending from basement to top floor. Sanitary arrangements of the highest class, with the best class of porcelain fixtures, and a heating system of hot-water circulation from a boiler in the basement is the usual installation. Domestic hot water is provided usually by automatic gas-heaters placed in the basement. All houses of this class and better are equipped with a vacuum-cleaning system operated either by electric or hydraulic pressure. A complete laundry with specially-arranged dryers would be installed in the basement. The interior finish of this house would probably include polished oak floors throughout, main staircase of oak, hardwood trim of either birch, oak, or walnut, with some panelling in the main rooms and the first-floor landing, while the bedrooms and the remainder of the house would be finished in white pine or white wood for painting; in many cases hardwood doors with natural finish are used right through the painted rooms, as well as those finished in hardwood. The windows might be wood casements, swinging in, or swinging out, or might have English box-frames with sliding sash. Metal casements are very little used, but are being experimented with. The roof might be of Canadian or U.S. American slates, or of cedar or pine shingles, and the flashing or sheet-metal work, down-pipes, gutters, &c., of copper, or possibly galvanised iron. There is usually included a garage for two motor-cars, fitted with heating, water supply, drainage, &c. This house would probably be built on a site having a street frontage of from sixty to one hundred feet, and would be set back from the side-walk line about forty feet, without any fence or hedge in front, the walks or drives being usually of concrete or gravelled.

With the careful planting of shrubs, vines, trees, &c., and the skill of the architect, a charming home, full of architectural merit in its design, is frequently obtained within a period of less than a year. This falling into the hands of a person of taste, with simple decorations and furniture, and the use of chintz coverings and Turkish or Persian rugs, &c., &c., makes for culture and refinement with coming generations.

The houses of the wealthy are merely exaggerations in size and detail of such a house as I have described.

What is known in London as the Town house, built on a narrow lot almost up to the street-line, arranged in terraces or attached, is scarcely known in Canada.

DISCUSSION OF THE FOREGOING PAPER.

The President, Mr. REGINALD BLOMFIELD, A.R.A., in the Chair.

THE PRESIDENT said they had had a most vivid and interesting Paper from Mr. Baker, and were fortunate in having present two distinguished gentlemen whom he would call upon to propose and second a vote of thanks. One was Mr. Herbert Baker, who had a brilliant reputation in South Africa in virtue of his distinguished work, and who had also had the courage and the generosity to establish a Studentship at the British School at Rome for the future South African architect. They had also with them Mr. J. G. Colmer, a very distinguished Canadian, who had done a great deal for Canada in this country. He would therefore call upon Mr. Herbert Baker to propose a vote of thanks, and Mr. Colmer to second it.

Mr. HERBERT BAKER [F.] said it had given him very great pleasure to be present that evening to hear the most interesting lecture just delivered to them, as well as to propose a vote of thanks to his namesake from across the seas. Mr. Baker had shown most ably how very progressive Canadians were in their architecture. But this was only to be expected by those who knew how very up-to-date, energetic, and progressive Canadians were, and how they had as their immediate neighbours the most energetic of all nations, who had shown, particularly in their architecture, such Titanic powers. But he was glad to hear from Mr. Baker that the Canadians had no more intention of being swallowed by these Titanic neighbours in their architecture than in their nationality. He was one of those who thought that the principle "Art for Art's sake" was a very dangerous one; it might take them along the "primrose path of dalliance," but would not carry them far up the "steep and thorny road to heaven." And that heaven or ideal before them was to interpret or give expression to the highest national feelings of their race and nationality. And if Imperial Federation should ever become a real fact—and Canada had recently shown by her great gift of *Dreadnoughts* how very earnestly she was striving to this end—then architects all over the Empire must be prepared by study to give expression to those ideals. If they were to have the same unity in their architecture as they hoped soon to have in their federation of nations, it did not mean that either in politics or in architecture they must give up their separate national individuality; indeed that would be quite impossible. Climatic reasons alone forbade. He did not think that it was generally sufficiently realised in this Northern climate how great the effect of climate was upon architecture. He did not think that sufficient importance had been given to it in the text-books. They knew the saying of Italians that "only dogs and Englishmen walk in the sun." He thought

that in the books one reads on architecture the authors had not got beyond "the walking in the sun" stage; they looked upon the sun as simply a thing of enjoyment, and did not realise that most Southern nations had worshipped the midday sun as an evil deity. When one lived and worked under a semi-tropical sun one realised the dominant influences it had had upon architecture. To his mind, Gothic architecture was not developed so much as text-books made out through the special characteristics or the "crusading spirit" of Northern nations, although these no doubt had a large effect, but almost entirely by the demand for letting sun and warmth into buildings. So that the effect of climate, particularly in the Southern dominions—perhaps less in Canada—together with the special needs and individuality of the people, would give a distinctness and individuality to its architecture. The question was how best to get this Imperial unity and spirit into our architecture. He thought it could be done largely in two ways: first, through their Mother Institute, which had come to be the real mother to nurture all its children; and, secondly, through the British School at Rome. He should like Mr. Baker to take back to Canada an idea of the value of that School. Some four or five architectural students from South Africa had been receiving the advice and hospitality of the School. Any British subject who was a genuine student of art could be made a member of the School, but although there had been four or five South African students there, there had been no Canadians; and he hoped Mr. Baker would take back this fact and explain it to his brother-architects in Canada. The best way was to get at the students, and he should like to see scholars from all parts of the Empire coming to study in Europe—they must often come to the Old World—under the direction of the Mother Institute and of the allied British Schools at Rome and Athens. And it would be good for all architects, young and old, to pay a pilgrimage every few years to St. Paul's, and then to the Pantheon, to stand under those majestic domes, so as to adjust their sense of scale. He hoped, therefore, that Mr. Baker would take back this message, and that in a few years they should hear of Canada making a present to the Mother Country of three fine young architectural student *Dreadnoughts*!

Mr. J. G. COLMER, C.M.G., in seconding the vote of thanks, said he was not an architect, and his knowledge of architecture was not very extensive, but he knew a piece of good work when he saw it, and he had no hesitation in expressing his satisfaction at the piece of work which had been presented to them that evening by Mr. Baker. It gave a very admirable illustration of what architec-

ture had done and was doing in Canada, and he believed it would give as much satisfaction in Canada as it had done in that room. Canada, it was true, was a very young country, but, as they had seen in Mr. Baker's illustrations, Canada had reason to be proud of its buildings. No one could go there and travel from East to West without being impressed with the character of the buildings, both public and private; they would be found to compare favourably with the buildings in towns and cities of similar size whether in the United States or in the United Kingdom, and that was saying a great deal for a country whose history was so recent as that of the Canadian Dominion. Mr. Baker had spoken of the opportunities for architects in Canada. That was a matter about which he had had some experience; he had known many young architects go from this country with letters of introduction, who had seemed to fall on their feet at once, and had not been long in making reputations for themselves and in making money, which was sometimes more favourably regarded even than reputation. What he liked in Canada was that there was no professional jealousy there. If a young architect went there he was welcomed, and given every assistance, counsel, and advice, and was regarded as an additional factor in helping the building-up of the country of which the Canadians were so proud. Mr. Baker had mentioned the absence of art galleries. That, unfortunately, was true, but in a young and vigorous community like Canada, where they were busily engaged in making money and developing their country, they had not so much time to devote to what they regarded as luxuries as people in older countries. But they had art galleries, and Mr. Baker would confirm him that both in Montreal and Toronto, as well as in some of the other cities, there were magnificent collections of pictures held by private persons. Many masterpieces were now in Canada; and he should like to think that those pictures, being there, would not only remain there, but would increase in numbers, and that they would form by-and-by a splendid nucleus for a great art collection in Canada.

Mr. T. H. MAWSON [*Hon. A.*], who was imperfectly heard at the reporter's table, has since committed his remarks to writing as follows:—In the matter of work I may claim to be as much Canadian as an Englishman. I am, therefore, delighted to meet Mr. Baker on this side of the Atlantic, for I know from personal experience what a salutary influence his work, his enthusiasm, and, may I add, his personal charm, exercise over the architecture of Canada. Great art, it is said, is only possible when great ideas are patent and the prevailing atmosphere. Our lecturer is a man of great ideas, and for this reason I regret that his overmastering modesty has led him to withhold views of his own work. Canada is truly a country of pulsating energy where men of vision, the true pioneers, are ever building castles in the air, whilst

others are laying broad foundations upon which these dreams, materialised, may firmly and safely rest. Do you remember that fervently eloquent address which Mr. Forbes Robertson delivered some time ago before the London Society in which he mentioned the Artist Cardinal who had told him that Greece developed her highest forms of architecture in her Colonies? History, he said, promised to repeat itself in *our* Colonies. I think Mr. Robertson's statement was meant as a warning and yet as a hope. So far as Canada is concerned, there is great hope, but I am bound to confess that I detected in Mr. Baker's address a disturbing element when he spoke of preference for English ideals. I wonder if I misunderstood him? Does he mean the ideals of to-day, or the English traditions we so easily laid aside? I am sure that every Imperialist (if he be also a patriot) would desire, above all things, that Canadian architects should go for their inspiration to that which exhibits the most consummate skill in its planning, the most scientific form of construction, the ripest scholarship, and the highest imaginative qualities rhythmically expressed. These are qualities which are not necessarily and wholly British possessions. Canadian architects are to be trusted, however, for every office of recognised standing possesses its well-selected and well-ordered library, housed in a separate room, which is the common room for principals and staff. Any office which centres round so much learning is sure to turn out excellent and inspiring work. Speaking as an onlooker and without that wide experience possessed by Mr. Baker, I should have thought the influence of the McKim and the Ecole des Beaux-Arts traditions were stronger than he seems to admit, and that the work of American architects, including the large number of railway stations designed by New York architects, and also the Gothic work of Cram and Ferguson, especially in the cathedrals at Halifax, Nova Scotia, and at Toronto, were also strong influences. I admit, however, that it was a perfect joy to me to see our Collegiate Gothic handled in such a masterly way by firms like Sproat & Roff of Toronto, and Brown & Vallance of Montreal, in the Universities of Toronto and Saskatoon. Also to see the fine work of the brothers Maxwell at the Regina Parliament Buildings, and the fine domestic work being done by Mr. Baker himself and others, like Mr. Meredith of Ottawa, and Mr. McClure of Victoria, and our friend Mr. Lawrence Gotch in Calgary. Mr. Baker and I are mutual admirers of the strongest of all influences now operating in Canada. I mean the work of that delightful man and great artist, Mr. Frank Darling, of Toronto, one of whose banks has been shown on the screen and met with your applause. It is by work of this high excellence that Canadian architects are wresting commissions from American competitors; and, may I add, it is by ability to do equally good work that young English architects will find a foothold in the

Dominion of Canada. Just one word about the craftsmanship of Canada. I do not know any country where one can see such perfectly beautiful brickwork or where patent stone is treated in such an honest and inoffensive way. Woodwork is most excellent; half-timber work, however, has never seemed to me to reach the quality of English work, but this is probably more the fault of the architect than the craftsman. I think metal casements are rapidly coming into use in Canada; in fact, I know of one firm alone who have paid an English firm \$78,000 for casements alone during the last three years. Westmorland slate is beginning to be used and should eventually oust the American slates. Much of the metal-work is charming, both in design and craftsmanship; sanitary fittings, central heating and vacuum cleaners, and every domestic labour-saving appliance has reached a higher degree of excellence than at home. Garden design, "the greater perfection," as Lord Bacon says, is little understood; but now that Canada has grown "to the age of civility and elegance," the art of garden-making will soon take its place and give the ideal setting to many truly ideal homes. Mr. Baker says that everywhere in Canada great interest is being taken in city planning. I, together with my friends Mr. Unwin and Mr. Vivian, have had some little share in fomenting an anxiety for civic betterment, and I am, therefore, delighted to be able to confirm this statement; and let me say in this connection that the Dominion owes a great debt in this matter to the influence and active support given to the movement by the late Governor-General Earl Grey. They are also most fortunate in having in H.R.H. Field-Marshal the Duke of Connaught another Governor-General who is deeply interested in city planning and everything which has to do with the development of a national and characteristic architecture. May I, in conclusion, suggest that this Institute might organise a trip to Canada? They would find true British hospitality and much to encourage them. In short, the trip would prove the most perfect mental tonic.

THE PRESIDENT said they had had a most interesting Paper from Mr. Baker, and were very grateful to him for having crossed the Atlantic to tell them about the architecture of their kinsmen beyond the seas. It was clear from his account of what was being done in Canada that their colleagues there were addressing themselves to the problem of architecture in a very practical and strenuous spirit; they were going into the essentials of the matter. In their banks, their public buildings, their hospitals, they were determined to have something which would answer the purpose, and that, after all, was what architects had to strive for, whether in the old countries or in the new. He gathered from what Mr. Mawson had said that Mr. Baker was himself responsible for some beautiful buildings which his modesty prevented him from showing

illustrations of. There was of course a point at which such a country as Canada, with all its splendid promises, must be, to use a vulgar phrase, "hung up" because it had not the tradition of architecture, and it was there that we of the Old Country might be able to help. Of course, we ourselves were rather like the Prodigal Son; we had had not only one tradition, but several, and we had squandered them all. And now our business was to build up this tradition of architecture. But even though we were prodigals and bankrupts, and several other things, we could not escape the consciousness of a great historic past in architecture. It was in that consciousness that the hope of the future of architecture in this country rested; and he was sanguine enough to think that that hope was not without foundation. Mr. Baker had said many things which they had listened to with great interest, and some which they all welcomed very heartily. He told them—and Mr. Herbert Baker of South Africa had confirmed him upon the point—that their Institute was regarded with very high esteem, and even affection, in those two great countries, Canada and South Africa. That was very welcome to them, because the Institute had to weather many storms, and might have to weather many more; but this loyalty of far-away countries, from those who were gone from them and were practising architecture across the seas, was one of the most encouraging things he knew. Mr. Baker also told them that in his opinion the most predominant influence in Canadian architecture was the British influence. That, again, was very encouraging. It was very significant that both Mr. Baker and Mr. Nobbs, the Professor of McGill University, should have urged the same appeal for some collections of replicas and reproductions of the best work that had been done in this country in the past, something such as they had in the Trocadero in Paris of the great French works. That was a very important appeal. We had the Architectural Museum at Tufton Street, but every one would admit that that was inadequate, and he thought we should do what we could in our own way to help this appeal. Mr. Herbert Baker had pointed out the splendid patriotism and genuine feeling in Canada with regard to the Mother Country. This was more than we thought possible a few years back, but now it was a magnificent fact, and they should do what they could to help in this matter, and he hoped the appeal would not pass unheeded at Whitehall. They had heard Mr. Baker throw out certain speculations as to the future of Canadian architecture during the next twenty years. He regretted to say he differed from one of the speakers; he did not think the path indicated by that speaker was one he should hope to see in the future architecture of one great member of this Empire. He thought the neighbours of the great Dominion had possibly overreached themselves, and had fallen a little too im-

petuously into the net of modern French architecture, because, he need hardly point out, modern French architecture was not the same thing as old French architecture. It was a very different thing, although he should be the last to disparage the work of his colleagues and friends across the Channel, some of whom did splendid work. But the modern vernacular of French architecture was not a thing to be adopted as the basis of a great tradition. They hoped that the future architecture of Canada would be founded upon an old tradition; whether French or English was for their colleagues in Canada to determine. If they followed those lines, he did not think they would have any difficulty, with their great ability and force of character and splendid possibilities, in establishing a great tradition of architecture. He did not doubt that that tradition would be perfectly elastic and adaptable to all the requirements of modern civilisation. And he would draw Mr. Baker's attention once more, as Mr. Herbert Baker had done, to the Imperial aspect of the case—viz. to the new British School at Rome. It was one of the most important departures in architectural tuition in the last fifty years, because if properly handled much might come out of it, and they should hope to see some brilliant young Canadians at work there.

MR. F. S. BAKER, in reply, said: I thank you for Canada and for myself for the kind and hearty reception which you have given my paper. If I have been able to tell you anything about the country which is so far away from you, and which probably thinks more about you at home here than you have time to think of it, I shall feel very glad. I commend it to your study, because it is a large district, and there is no doubt its development will go along the lines that the people who go to live there outline for it. It has been most interesting for me to-night to meet Mr. Herbert Baker from South Africa. I am sorry I cannot claim him as a kinsman, but I feel very proud that a man of the name of Baker should be such a distinguished gentleman. He comes direct from Rome, where he has been closely in touch with the new British School of Architecture, and I shall certainly make it my duty, on going back to Canada, to bring full particulars of the scholarships and the opportunities presented by that School to the members and students of the profession in Canada. You must realise that our students are few in number, and are not well off; and it is not easy for them to contemplate the spending of a few years in Rome. Most of them are boys who are making their own way, and are not the sons of rich men. I am afraid the sons of rich men in Canada look for some easier work. What Mr. Baker said about climatic conditions is true. It would be absurd, for instance,

to see a delicate Spanish cornice hanging with great icicles or piled up with snow; and there are many things possible in Spain and South Africa which would not be possible in Canada. And I think that is what most impressed Mr. Richardson after his studies in France and Spain, namely, the necessity of using materials in America in a way suitable to the climate. That is why we have those unusual works which were designed by him. Mr. Mawson spoke of the McKim, Meade & White office and its effect on Canadians. But whilst the highest tribute must be paid to them individually and as a firm for the wonderful buildings which they have produced, there is not in Canada a feeling that the school of McKim, Meade & White is an altogether desirable one. There is certainly there—and our President's remarks have brought it to my attention—very clearly the desire to follow the tradition that goes back beyond any result which McKim, Meade & White have attained. There is arising now in Canada a collegiate Gothic architecture—and there are some photographs amongst those I brought over which show its commencement, and I hope indicate a good future for it—which undoubtedly is based upon the sound tradition of perhaps the best period of English architecture. I think many Canadians accept the idea that not only in architecture, but in almost everything, England has experimented, and finally arrived at a conclusion which might be called a conservative conclusion, and having tried all, has adopted that which seemed best to her. It is easy to try a new thing, and then another new thing, but the world goes on and on. The United States architects have been working at the Five Orders in recent years, but in that country also I see many signs of a day of better work coming along. We have undoubtedly some good private art collections, but they are not available for the student, and I do not hesitate to say that adequate buildings will be forthcoming when the collections can be obtained. I think we have to look to England for assistance in obtaining those collections. The Ecole des Beaux-Arts has been spoken of to-night as if Canadians were strongly influenced by it. I think it is largely owing to the work of Professor Nobbs that that school, the excellence of which is universally accepted, is not held in higher esteem in Canada in its results than is the sound training obtainable in England. It is recognised that whilst the old French work was magnificent, the modern French work is not so much to be admired, nor are, in my humble opinion, the modern French methods of draughtsmanship. Something straightforward, something plain and useful and sensible, is what the Canadian is always looking for. If he can get the direct result in a direct way, that will convey without loss of art the correct idea to his critic, that is what he wants.

REVIEWS.

OUR OLD COUNTRY BUILDINGS.

Old Houses and Village Buildings in East Anglia, Norfolk, Suffolk, and Essex. By Basil Oliver [A.]. Illustrated by Collotype Plates from photographs specially taken by Horace Dan, Sydney A. Driver, and others. Sm. 4s. Lond. 1912. 21s. net. [B. T. Batsford, 94 High Holborn.]

The work of collection of records and illustrations of our old country buildings is one of increasing importance and desirability in view of the frequent demolition or mutilation of fine examples by unsympathetic or ill-informed owners. Especially is this the case in respect of the smaller buildings in country towns and villages. The larger houses and mansions are, to a great extent, in the possession of persons of enlightenment, who, as a rule, may be trusted to have a due sense of their responsibility in regard to the buildings of which they are, for the time being, the owners. Whether this sense of responsibility is engendered by a regard for the buildings themselves or by a wholesome dread of the opprobrium of their fellow-creatures is not material to the argument.

From another point of view, too, the importance of the preservation of the humbler class of building is relatively greater than in the case of the mansions of the wealthy; for the cottages and small houses which are scattered over the countryside stand, as a rule, in close proximity to the highways where they give pleasure, or the reverse, to millions of passers-by, whereas the great houses, for the most part, lie secluded within their parks and are a joy or an offence to comparatively few.

In selecting for illustration representative examples of all types of small buildings—other than ecclesiastical—which were erected in the counties of Norfolk, Suffolk, and Essex between the latter part of the fifteenth century and the early part of the eighteenth, Mr. Basil Oliver has, by the exercise of careful discrimination, produced a work of considerable interest and value. He rightly draws attention to the effect of foreign influences on the architecture of the locality in the forms employed, the methods of construction, and even in the arrangement of plans. The assimilation of these foreign influences was, however, so happily effected that the result, as we see it to-day, is essentially English. Where, for instance, can more typical examples of English villages be found than at Kersey or Stoke-by-Nayland in Suffolk? Here is no striving after effect. On the contrary, the buildings are an expression of the simple needs of the inhabitants, the right use of local materials, and a lack of that affectation too often found in even the best work of to-day. For the purpose of his book Mr. Oliver has classified the buildings selected according to the materials with which they are constructed, a system which facilitates the comparison of varieties of treatment in individual cases of the same general type.

The book is well illustrated by collotype plates reproduced from photographs and by excellent drawings in the text. The author is to be congratulated on a work of which the production must have afforded him immeasurable pleasure, and which is full of suggestion and information to all who are interested in one of the most attractive phases of English architecture.

HERBERT PASSMORE [A.].

ON CATHEDRAL GUIDE-BOOKS.

Canterbury Cathedral. By S. Hurst Seager [F.]. Illustrated with 49 photographs specially taken by the Author. "The Tourist Cathedral Series." Fcp. 8s. Lond. 1912. [Simpkin, Marshall & Co.]

The writing of a concise and instructive hand-book for the man in the street who visits our cathedrals must be more difficult than it might seem, so little is the success generally achieved, although, with Willis's unrivalled spadework as a basis, Canterbury ought to be among the easiest of our shrines to work upon. This recent effort brings us no nearer an ideal. The compilation claims the merit of a review in this JOURNAL because written with a fresh idea in it and by a Fellow of the Institute. It may serve, too, to suggest a few passing thoughts upon such guide-books in general.

The complicated history of any one of our cathedrals, each one a complete history book in itself, cannot be comprised, to satisfy the particular inquirer, in a brief text-book, however deftly put together. Nevertheless, even the musty archaeologist who comes to explore a new field, or to revive an old one, may be grateful for facts, no matter how popularly set forth, if accurate, methodical, and concise. With these positive wants some not less important negative needs must be combined. No individual theories are called for in such a guide-book; and, above all, no aesthetic opinions or criticisms. It is right to assume ignorance of architectural style upon the part of the reader, but unsafe to credit him with knowledge of historical facts. The sequence and dates of English kings are often beyond his ken, even if he be Briton or Colonial-born—still more so if American. The rota of prelates, abbots, or priors is necessarily a sealed book to him. Every such guide for popular use, then, should be prefaced by clear tables of architectural styles with their approximate dates set against the dates of the reigning sovereigns, and with complete lists and dates, so far as known, of the ecclesiastics and others whose names are intimately associated with the fabric. No difficult task is involved in arranging these in one comprehensive table, which might be printed on a folder and bound in to be read with every page of the text. But even so, styles, sovereigns, and prelates, when named in the text, should have their dates bracketed with them. Marginal dates, always so helpful, need not be spared.

When accurate dates or authorship of any part of the building are available, these should obviously be given.

Our author falls short of meeting the needs or avoiding the pitfalls thus indicated, but he has nevertheless an individual method of his own. He writes frankly, as tourist for tourist, and as such is not shy about touching on the elementaries. He expresses himself with some spirit, and were his work but a trifle more dependable it might be recommended even to the twentieth-century architect who permits himself some digression from the fashion of to-day to a past relegated now too often to the dilettante inquirer.

Here we have a guide-book with a theory developed in a reasoned, if somewhat wordy, preface likely to be read by few tourists and not necessarily helpful for those who prove the exceptions. Gibes at some modern tendencies are pointed. We can picture the well-earned repose of the shades of Winckelmann, Lessing, Pater, Ruskin, or Augustus Hare disturbed by the pithy statement that "it is the bane of this literary age that the attention of the people is directed more and more to the description of things than to the things themselves," but Pater and Ruskin, at any rate, rallying again to learn nevertheless that "the Cathedrals are the Mecca of tourists from all lands." There are here to be no "Mornings in Canterbury" for the latter-day pilgrim. Having purchased this guide-book in advance, digested it and studied the author's photographs, the buildings, we are told, are to tell their own story. Those unfortunates who fail to reach Mecca may yet absorb an accurate impression of their would-be goal by aid of the author's pen and camera.

Our doubts as to the success of the method do not lessen our appreciation of the author's intentions. But it is really a serious blemish in a guide setting forth such principles when its author, while urging deprecating excuses, nevertheless forces his somewhat inchoate critical opinions upon his reader, thereby compromising both his method and his object. He thinks they may be "of some value as a guide to others." We disagree. We have no wish to be told, if only by implication, that Christ Church gateway, even in its extreme decay and bereft of its turrets, or Chillenden's inimitable pulpitum, or Kemp's or Stratford's or Dean Wotton's monuments, or many other items which could be named, are not the best of their kind because he has failed to grasp their full merit or may not agree with us.

His range of observation, too, has failed to disclose to him what an unsatisfactory exponent of architecture photography is in any but a superficial sense. Not one plate in twenty succeeds in giving that true character or latent spirit of a work of architecture which the trained eye grasps intuitively from the object itself. It may be truly said of photography in this relation that it can and

often does show a new building at its best, while it makes the least of an old one. And a few moments' thought tells us why.

It is a blemish on the book that mention of Willis's great work—monumental as the building itself—is relegated to a bibliography at the end of the volume, and Willis's name otherwise appears only in small print at the corner of his own plan reproduced by Mr. Seager with this too scant acknowledgment. No text-book on Canterbury Cathedral but should tempt its reader towards this exemplar for all time of such archaeological research set forth so attractively and lucidly that the least instructed may enjoy and profit. And if Eadmer and Gervase, the latter the most famous and complete of our mediæval architectural historians, do not even get a passing nod, we need not be surprised if such comparatively latter-day historians as Somner and Gostling are ignored even in the Bibliography.

Prefaces, introductions, and bibliographies are too apt to be ignored by the sightseer. In a future edition, which we hope may be reached, the author should make his Introduction, with some needful amplification, into his first chapter. Obviously outlines only are called for in a condensed history, but, according as this chapter is well done and complete, so much the better can the tourist lay aside the book as directed when he visits the building. If Sudbury is mentioned, why not Arundel? And if French William, why not English William his successor, whose output at Canterbury was really far more interesting than his master's? But English William is almost systematically ignored throughout and his work sometimes unjustly given to his French predecessor.

On another interesting and debatable point Mr. Seager is misleading because he jumps too readily at conclusions. He assumes that because Conrad's name is attached to his glorious choir he was the actual architect or designer. He may have been, of course, but equally may the assumption be misleading. Goldstone II. put his rebus and his initials upon the work erected during his priorate, and there are strong reasons for thinking he may have been more than the mere director, supervisor, or collector of the funds. But we have no certainty, and such an assumption is less justifiable at Canterbury than perhaps elsewhere when we have such known laymen architects as the French and English Williams, and that one curious instance which connects our modern practice so much more closely with the mediæval than might have been thought possible, Thomas Mapyilton, the consulting architect of the early fifteenth century, who was paid to visit Prior Wodensberg's work from time to time to give advice.

There are many loose and discursive if unintentional inaccuracies in the volume before us. We are told in almost consecutive sentences that Lanfranc's north-western tower had and had not

been faced by Perpendicular work at the time of its destruction, that the Angel steeple does and does not encase its predecessor, and so on. St. Michael's Chapel is interesting as an inscribed work, erected during the priorates of Wodensberg and Molash, at the cost of Margaret Holland in commemoration of her two husbands. But we only learn from the guide that the character of the work indicates its erection by Chillenden, who, no doubt, projected it.

Prior Oxydenne's window in the Anselm Chapel is correctly dated 1336, but is ascribed to Prior d'Estria, who died in 1331. It is also set forth as one of the few pieces of decorated work the Cathedral has to show. What of the chancel of the Infirmary Chapel (Hadebrand's work again, not Estria's, as stated), the Table Hall, the parclose screens, Estria's, Hadebrand's, and Stratford's tombs, or the lower part of the Chapter House, correctly assigned elsewhere by the author to this period? And in regard to the decorated work at Canterbury, no tourist should come there without being told of the singularity of Kentish decorated tracery.

For the sake of accuracy we must note a few more points wherein our author is lacking. There is surely no dispute as to the origin of the term "Becket's Crown." Mr. Seager states as a fact that Meist' Omers is derived from *Ormeaux*—the elms which grew near it. This was a mere suggestion put forward by Professor Willis—for once missing a point—to explain a curious word. There was a treasurer Meister Omers who gave his name to his house.

More than once it is stated that there is no record of the erection of the great *pulpitum*—one of Chillenden's best recorded works. The visitor is told that the Norman columns of Lanfranc are within the great tower piers, but is not directed to the most interesting fact that the capital of one of the Norman columns can actually be seen from the floor of the church. Another very interesting fact in the crypt, the additional pillars passed through the vaulting of Ernulf by William of Sens to carry his new superstructure, is not referred to. The erroneous designation of the tomb of Lady Tryvet as that of the Countess of Athol is perpetuated, while not one word is said of the remarkable series of paintings in St. Gabriel's Chapel hard by, and the strange good fortune of their preservation. This omission is the more remarkable as Mr. Seager dwells a good deal upon the value and interest of mediæval wall-painting. We had thought that the days of narrow views when everything other than Gothic was "taboo" had gone by. Lovers of Canterbury as a whole will resent the slur cast upon its first Dean's admirable tomb. We need not be left in doubt that the Reculvers columns are surely Romano-British work with the capitals "boasted" for carving.

Other slips might be mentioned, but where inten-

tion is so good and matter often so interesting it is uncongenial to multiply examples of the author's lack of accuracy or perspicacity. We hope he will revise and republish the little manual. He has some pleasant concluding pages upon St. Martin's, St. Augustine's and St. Pancras which he might well amplify by directing the tourist to the ancient parts of the Archbishop's Palace, Christ Church gateway, the West Gate, and many other points of interest in the city which no tourist should miss. If only he will verify facts and suppress personal likes and dislikes he has it in him to write a really useful guide. And in suggesting the improvement of his method and the clarifying of his matter we readily express our gratitude for some pleasant hours spent in his company among familiar scenes.

F.S.A.

INTERNATIONAL TECHNICAL DICTIONARIES.

The Deinkhardt-Schlomann Series of Technical Dictionaries in six languages. Volume VIII. dealing with Reinforced Concrete in Sub- and Super-structure. 6s. net. [London Publishers, Constable & Co.]

[Mr. Digby L. Solomon [A.], Hon. Secretary of the Science Standing Committee, writes:—"Volume VIII. of this work was sent to the Institute by Mr. Chalkley, the acting English editor of the Series, with a request for an expression of opinion upon it. The book was submitted for the consideration of the Science Standing Committee, and they deputed two of their members, Messrs. W. E. Vernon Crompton and W. R. Davidge, to review it. Their review was read at a meeting of the Science Committee, and it was resolved to send it for publication in the JOURNAL."]

The Science Standing Committee of the Institute have suggested that a short review of this International Technical Dictionary might be of service to architects who have work abroad or are otherwise interested in Continental practice.

The dictionaries are in six languages, the arrangement being to give, where possible, a small illustration, with the corresponding technical terms in German, English, French, Russian, Italian, and Spanish.

The present volume, which deals with reinforced concrete and kindred matters, is the eighth of the series, the volumes at present issued dealing principally with purely engineering subjects. The book has evidently been compiled with so much labour that it is a pity there are so many inaccuracies and that the illustrations are so poor in many cases.

First as to these illustrations, perhaps nothing more could be given in a small book such as this, but they are misleading in some cases and very often insufficient: for instance, the illustration of the Kahn bar on page 6 is given in cross-section only, and shows nothing of the oblique arrangement of the bars to counteract shearing, which is the main idea of the patent. Lower down on the same page an illustration showing a form of patent-grooved bar is labelled "Channel iron," a name

which is, however, repeated further on with a proper illustration.

The illustrations for neutral axis and parallelogram of forces, to ram or tamp, door frame, &c., are more or less inaccurate or insufficient.

The words "Stress" and "Strain" seem to be used without any distinction as to their meaning, and in many cases the English and French have evidently been separately translated from the German and placed side by side without their relative meanings being as exact as could be wished. The English equivalent is sometimes only approximately correct, as the German "Vulkan sand" is translated "vulcan sand"; volcanic sand would be better, although a term rarely used in England. The English translator, although he has, on the whole, been successful, seems to be hardly acquainted with some of the technical terms used in building. For instance, the expression meaning "to flush up the joints" is rendered "to cleanse or wash"; the expression "Solepiece" appears as "packing piece under the wedge"; "earthy matter" is written as "mouldy substance"; dwelling house is Germanised into "habitation premises"; "winder" in a staircase is rendered "angular step," and "handrail" is rendered "bannisters."

The illustrations of bonds and masonry do not altogether accord with English ideas; a rubble wall with squared quoins appears as "wall in ashlar or dressed stone." "Polish bond" is what we usually know in this country as Flemish bond. "Stretching bond" is illustrated by a thick wall entirely constructed of headers.

Such instances might be indefinitely extended, and the difficulty of simple translation in technical terms often leads to unnecessarily long sentences. It seems to us a mistake to admit such sentences into a dictionary when the equivalent in other languages is not idiomatic, as there is no place where one can logically stop; for instance, if the phrase "Interruption of work" is given quite unidiomatically in six languages, why not give "Continuation of work" or "Interruption of contract"? The important phrase "building contract" is not given at all; nor cast-iron, template, dovetail, hard-core, dry filling, deflection, drawing, or design.

The volume, although nominally dealing only with reinforced concrete, includes so many general items of construction that, with thorough and careful re-editing, and with but very few additions of this character, it would fill a gap not otherwise occupied.

W. E. VERNON CROMPTON [F.].

W. R. DAVIDGE [A.].

support it is likely to receive. The editorial work alone up to the present has cost over 1,000,000 marks, and it is estimated that a further 1,500,000 marks will be required to complete it. The publishers are prepared to spend another 500,000 marks should the completion of the work be decided on. Financial aid has been promised by the German Government and by the Institute of German Engineers. The matter at present is in the hands of a German Committee, consisting of well-known authorities in technical science, representatives of the German Government, the leading technical societies, manufacturers, and others. As the work is of international importance, the German Committee propose to approach foreign Governments for financial and other assistance, and if the response is satisfactory an International Committee will be appointed.—Ep.

LONDON, AND THE OPPORTUNITIES OF THE LONDON SOCIETY.

WE all love London. We can all in our own way wax enthusiastic about London, with her many-sided character and her many-sided charm. We have all felt the inspiration of the teeming energies, the magnetism of the human hive, the thrill of civic pride at her greatness and immensity, and with us all there is a certain proud feeling of proprietorship which we cannot disguise from ourselves. The very stones of London cry out and tell us of her history which is *our* history, her struggles we know are *our* struggles, and her future we realise must, to a great extent, be bound up, indissolubly bound, with *our* future.

The London Society, if it is to be true to its name, must be many sided in its interests and in its composition. It has an opportunity such as few new societies can claim; its subject matter is known to all, its programme is sympathetically received by all, and, with enthusiastic and popular guidance, will be enthusiastically supported by all.

The first public meeting of the London Society, at the Mansion House on the 13th January, was a brilliant success, and the organisers of the Society are to be congratulated upon thus launching the Society on its public career. The Lord Mayor, in his introductory speech explaining the object of the Society, struck a note which will undoubtedly find its echo in many Municipal Councils in and around London. He welcomed the promise of skilled co-operation between such a body of citizens and the municipalities, and said that he himself believed that the work of the Society could be accomplished without any additional burden being placed upon the rates. Enormous sums had been expended on improvements in recent years without any adequate return being obtained, mainly because these improvements were carried out through local considerations and without the formulation of any well-considered scheme for the improvement of London as a whole. The objects of the Society were to beautify and improve London, and those objects could only be successfully accomplished by an independent and powerful Society. Lord Curzon then moved a resolution supporting the

* * It is gathered from a letter from Mr. Alfred Schlomann, giving particulars of the scope of these dictionaries, that the work will run into thirty volumes, and will cover the terminology of various sciences and industries. "Constructional Building above and below ground" is to be dealt with in Vol. XIII. The estimated cost has been so far exceeded that the continuance of the work will depend partly upon the public

proposals of the London Society "in furthering the improvement and beautification of London and in arousing the interest of Londoners in their great city, and expressing the hope that public authorities would co-operate with the Society and help to make London a worthy capital of the Empire."

Lord Curzon said that in a sentence their object was to make London beautiful where it was not so already, and to keep it beautiful where it already was so. Their capital was very like the British Empire of which it was the head—both had grown up almost unawares, and both had now reached a point at which they had to take counsel, to take stock of the position and see what they were to do for the future. London was beautiful in nooks and corners, in parts and sections, but nobody contemplating that huge area could say that it was beautiful as a whole. The field of work for such a Society was very wide; there would have to be some co-ordination of existing authorities, perhaps there might have to be created some central single town-planning authority to work for the whole, possibly there might have to be some readjustment of local taxation. He had no doubt that the Committee of the Society would direct their attention to the laying out of streets, to the erection of buildings, to the construction of bridges, to the alignment of roads, perhaps also to the proper placing of statues in London, at present so melancholy, so pitiful, so unutterably forlorn. Then there was the traffic problem, which was a matter of the most urgent importance, and it might well be that before anything substantial could be done the assistance of the Legislature would be required. Then there was the preservation of our old memorials; Temple Bar had gone, Crosby Hall had gone, but there were many priceless possessions still to be preserved.

Lord Curzon's view was that the plans of the Society ought not to be at all lacking in imagination or idealism—indeed, if they must err, let them err on the side of imagination; at the same time, if the proposals framed were to be effective, they must be business propositions. The beautification of London would in many cases treble the value of the property dealt with, and his own view was that a good deal of the improvement would be paid for by the increased land values which it would thus create. His dream of the London of the future looked to the south side of the river—across the river he would make a clean sweep and have room for a large conception. He would like to see a new city grow up in the future on the south side of the river, and then perhaps something might be done to revive the vanished river glories of the past.

Other speakers, among whom were such eminent authorities as Lord Plymouth and Sir Aston Webb, emphasised the possibilities of the south side of the Thames. When in the years to come a broad embankment stretches along the south side from Westminster to the Cathedral Church of St. Saviour's, the Thames will assume its rightful position as the

noblest river passing through the capital city of any Empire. Another thing that we should like to see would be a great thoroughfare from Westminster to the south end of London Bridge. Then the two iron bridges of Charing Cross and Cannon Street should be replaced by stone ones. Another matter of great importance is that some statutory power should be given to some one authority to lay down definitely the main roads out of London to the suburbs and to other parts of England. At present Greater London is besieged by about fifteen town-planning schemes from different authorities. If those schemes should be laid down definitely before some definite scheme of main roads is laid down, London would be in a worse condition than before.

As Sir Aston Webb truly said, what can be done now at a comparatively small cost would in the future probably never be done, or, if done at all, could only be done at an enormous cost of time and money. Many opportunities have already been lost; many, however, still remain, and it behoves us as citizens, and especially as members of the architectural profession, to do as much as possible to carry forward this high ideal of the London of the future. The London Society has a great ideal before it, and to carry the ideal to a successful culmination in the years to come will require an immensity of patience and breadth of view, and at the same time an infinite attention to the lesser and apparently insignificant details.

The work of the Society may well extend over, not a few years only, but centuries, each age and each generation bringing in its train for the British race new needs and new opportunities for the service and the beautifying of the common home.

W. R. DAVIDGE [A.].

Books Received.

- Byzantine and Romanesque Architecture. By Sir Thomas Graham Jackson, Bart., R.A. 2 vols. Sm. 4s. £2 2s. net. [Cambridge University Press, Fetter Lane, E.C.]
- Greek Refinements: Studies in Temperamental Architecture. By William Henry Goodyear, M.A. 4s. £2 10s. net. [Henry Frowde, Oxford University Press, London.]
- Church Bells of England. By H. B. Walters, M.A., F.S.A. Illustrated by 170 photographs and drawings. 8s. 1912. 7s. 6d. net. [Henry Frowde, Oxford University Press.]
- The Orientation of Buildings, or Planning for Sunlight. By William Atkinson. 8s. Lond. 1913. 8s. 6d. net. [Chapman & Hall, Ltd., Henrietta Street, Covent Garden.]
- Building Stones and Clay-Products. A Handbook for Architects. By Heinrich Ries, Ph.D. 12s. 6d. net. [Chapman & Hall, Ltd.]
- The Story of Architecture in Oxford Stone. By E. A. Greening Lamborn. Sm. 8s. Oxon. 1912. 3s. 6d. net. [Henry Frowde, Amen Corner, E.C.]
- Suggestions on the General Arrangement, Structure, and Equipment of Public Swimming Baths and Bathing Places. By E. Harding Payne, A.R.I.B.A. 8s. Lond. 1912. Price 6d. [Southern Counties Amateur Swimming Association: Hon. Sec. H. E. Fern, "High View," High Barnet.]
- Estimating for Reinforced Concrete Work: A Handbook for Measuring and Pricing Reinforced Concrete. By Major T. E. Coleman. 8s. Lond. 1912. 4s. net. [Batsford.]
- Spon's Practical Builders' Pocket-Book. By Clyde Young, F.R.I.B.A., and Stanford M. Brooks, Licentiate R.I.B.A. 6½ in. x 3½ in. 74 Illustrations. 5s. net. [Messrs. E. & F. N. Spon, Ltd., 57 Haymarket, S.W.]



9 CONDUIT STREET, LONDON, W., 25th January 1913.

CHRONICLE.

Mr. Baker's Paper on Canadian Architecture.

A large and representative gathering of members and students, with a numerous company of visitors, assembled at the Institute on Monday to do honour to Mr. F. S. Baker, the distinguished Canadian architect who fills the position of Hon. Secretary R.I.B.A. for Canada, and till lately was President of the Royal Architectural Institute of the Dominion. Mr. Baker had made the long journey from Toronto expressly to deliver in person the Paper on Canadian Architecture he had kindly undertaken to prepare for the Institute. The journey by the shortest route takes ten days, and Mr. Baker only arrived in London on Monday morning. His first visit was to the Institute, bringing with him a collection of several hundred photographs illustrating the various types of building he so ably describes in his Paper. These, hung round the walls of the Common Room, made a very interesting and informing exhibit which came in for a good deal of attention. Though a Canadian born and bred, and living all his life in Canada, Mr. Baker is no stranger at the Institute, but this is the first time he has ever figured prominently at one of its meetings. On rising for the reading of the Paper, after a few words from the President expressive of members' grateful appreciation of the trouble he had taken on their behalf, Mr. Baker was greeted with the long continued and enthusiastic applause of the audience, which was renewed again and again at the close of the Paper and on the motion for the vote of thanks. Scarcely less enthusiastic was the reception accorded to his eminent namesake, Mr. Herbert Baker [F.], whose architectural work in South Africa has won for him the admiration of his brother architects, not only in South Africa, but in every country of the British dominions. In calling upon him to move the vote of thanks, the President reminded the meeting of Mr. Baker's munificent gift of a Scholarship to enable the young architects of the country of his adoption to study in Rome and Athens. This Scholarship, it will be remembered, is of the value of £250, and is awarded every alternate year, being

administered in Europe by the Royal Institute of British Architects working in conjunction with the British Schools at Rome and Athens.

R.I.B.A. PRIZES AND STUDENTSHIPS 1913.

The Award.

The Designs and Drawings submitted for the Institute Prizes and Studentships are now on exhibition in the R.I.B.A. Galleries (9 Conduit Street, W.). The Council's Deed of Award, read at the General Meeting of the 20th January, gives the results as follows:—

THE ROYAL INSTITUTE SILVER MEDALS.

(i.) *The Essay Medal and Twenty-five Guineas.*

Thirteen Essays on subjects selected by the competitors themselves were received for the Silver Medal under the mottoes and titles as follow:—

1. "A": Some French Painter-Decorators of the Renaissance: an Historical Essay.
2. "Anti-Baroque": Baldassare Peruzzi of Siena: a Biographical Essay, together with a Critical Description of his Architectural Works.
3. "Antonio": A Small Church and its Greater Significance: Santa Maria di Loreto, Rome, as a Tide-mark of the Renaissance.
4. "Bahnhof": The Architecture of Railway Stations.
5. "Cherish Hope": Proportion in Ecclesiastical Edifices.
6. "Chi non sa far stupir vada alla striglia": Baroque Architecture.
7. "De Gustibus nil Disputandum": The Origin and Development of the Tower and Spire in England.
8. "Durmast": The Timber Style.
9. "Laborantes uno animo": Architecture, the Manifestation of the Structural Principle.
10. "Les longs souvenirs font les grands peuples": The Preservation of Ancient Monuments.
11. "Perseverando Vincimus": Conditions of Life and Thought and their Influence on Architecture.
12. "Rus in Urbe": The Principles to be observed in Designing and Laying-out Towns treated from the Architectural Standpoint.
13. "Toscana": The Application of Colour to Internal Architecture.

The Council award the Medal and Twenty-five Guineas to the author of the Essay on "The Preservation of Ancient Monuments" submitted under the motto "Les longs souvenirs font les grands peuples" *; they also award additional prizes of five guineas each to the authors of the essays on "The Architecture of Railway Stations," under the motto "Bahnhof," † and "Santa Maria di Loreto, Rome," under the motto "Antonio," ‡

(ii.) *The Measured Drawings Medal and £10 10s.*

Nine sets of drawings were sent in of the various buildings indicated, and under mottoes as follow:—

1. "Burmah": 6 strainers (Church of St. Agnes, Cawston, Norfolk).

* "Les longs souvenirs font les grands peuples": Wm. James Davies.

† "Bahnhof": Martin Shaw Briggs.

‡ "Antonio": C. Percival Walgate.

2. "Chauncit": 6 strainers (Church of St. Vedast, Foster Lane).
3. "Grecque": 3 strainers (Old Town Hall, Manchester).
4. "Guita": 6 strainers (St. Mary Abchurch, London).
5. "Mitre": 6 strainers (Southwell Minster, Notts).
6. "Pax": 7 strainers (Blenheim Palace).
7. "Postman": 6 strainers (General Post Office, St. Martin's-le-Grand).
8. "Walworth": 5 strainers (Fishmongers' Hall).
9. "X": 6 strainers (Manchester Old Town Hall).

The Council award the Medal and Ten Guineas to the author of the drawings of Blenheim Palace, submitted under the motto "Pax,"* and Certificates of Hon. Mention to the authors of the Drawings of Southwell Minster, Manchester Old Town Hall, and the Church of St. Agnes, Cawston, Norfolk, submitted under the mottoes "Mitre,"† "X,"‡ and "Burmah"§ respectively.

THE TRAVELLING STUDENTSHIPS.

(i.) *The Soane Medallion and £100.*

Fourteen Designs for a Terminal Railway Station were submitted under the following mottoes:—

1. "Charge": 6 strainers.
2. "City Gates": 6 strainers.
3. "Eclipse": 6 strainers.
4. Green square (device): 4 strainers.
5. Locomotive (device): 6 strainers.
6. "Mona": 6 strainers.
7. "Non Ho Finito": 6 strainers.
8. "O.R.": 5 strainers.
9. "Peter Loo": 7 strainers.
10. "Queen's Knight": 6 strainers.
11. "Registered Luggage": 7 strainers.
12. "Rocket": 7 strainers.
13. "Solertia Ditat": 8 strainers.
14. Swan (device): 6 strainers.

The Council award the Medallion and £100 (under conditions) to the author of the Design submitted under the motto "Solertia Ditat,"|| and Certificates of Hon. Mention to the authors of the Designs submitted under the mottoes "Rocket"¶ and "Registered Luggage"*** respectively.

(ii.) *The Owen-Jones Studentship and £100.*

Four applications and Drawings were received from the following:—

1. Ivor Beaumont: 6 strainers.
2. H. P. Huggill: 6 strainers.
3. William Harvey: 6 strainers.
4. Walter M. Keesey: 6 strainers.

The Council award the Studentship Certificate and (subject to the specified conditions) the sum of £100 to Mr. Wm. Harvey, and Certificates of Hon. Mention to Mr. H. P. Huggill, Mr. Ivor Beaumont, and Mr. Walter M. Keesey.

- * "Pax": H. C. Mason.
 † "Mitre": William Leonard Boghurst Leech.
 ‡ "X": Gordon Hemm.
 § "Burmah": Bernard Preston Gaymer.
 || "Solertia Ditat": James M. Whitelaw.
 ¶ "Rocket": H. Chalton Bradshaw.
 *** "Registered Luggage": Robert W. Cable.

(iii.) *The Pugin Studentship and £40.*

Eight applications were received for the Pugin Studentship from the following:—

1. C. Peake Anderson: 4 strainers.
2. Joseph Hill: 4 strainers.
3. George H. S. Holt: 4 strainers.
4. F. E. Howard: 4 strainers.
5. Julian R. Leathart: 4 strainers.
6. A. E. Lowes: 4 strainers.
7. William Paterson: 4 strainers.
8. L. Powell: 3 strainers.

The Council award the Studentship, Silver Medal, and (subject to the specified conditions) the sum of £40 to Mr. Wm. Paterson, and Certificates of Hon. Mention to Mr. Joseph Hill and Mr. F. E. Howard.

(iv.) *The Godwin Medal and £65.*

Three applications were received for the Godwin Bursary from the following:—

1. M. S. Briggs.
2. Charles Holden.
3. Arthur F. Wickenden.

The Council award the Medal and (subject to the specified conditions) the sum of £65 to Mr. Charles Holden [A.].

(v.) *The Tite Certificate and £30.*

Twenty-nine Designs for the Façade of a Royal Palace in a City were submitted under the following mottoes:—

1. "Abacus": 3 strainers.
2. "Amenhotep": 3 strainers.
3. "Anarchist": 3 strainers.
4. "Black Diamond": 2 strainers.
5. "Blue Eagle": 3 strainers.
6. "Canstence": 3 strainers.
7. "Circle": 3 strainers.
8. "Facilio": 3 strainers.
9. Green and gold seal (device): 3 strainers.
10. "Gegalah": 3 strainers.
11. "Here we are again": 3 strainers.
12. "Iram": 4 strainers.
13. "Italy": 3 strainers.
14. "Juvenis": 3 strainers.
15. "Lorelei": 3 strainers.
16. "Mano": 3 strainers.
17. "Mimosa": 3 strainers.
18. "Nigel": 3 strainers.
19. "Nihil sine labore": 5 strainers.
20. "Palladio": 3 strainers.
21. "Patrick": 3 strainers.
22. "Pax": 3 strainers.
23. "Roma": 3 strainers.
24. "Sketch": 1 strainer.
25. "Strike Sure": 3 strainers.
26. "Swastika": 3 strainers.
27. "The Butterfly": 3 strainers.
28. "Thesus": 3 strainers.
29. "Vicenza": 3 strainers.

The Council award the Tite Certificate and (subject to the specified conditions) £30 to the author of the Design submitted under the motto "Palladio,"* and a Certificate of Hon. Mention to the

* "Palladio": Cyril A. Farey.

author of the Design submitted under the motto "Roma." *

THE ARTHUR CATES PRIZE: FORTY GUINEAS.

One application was received for the Arthur Cates Prize, viz. from Mr. Charles Fredk. Butt, and the Council have awarded him the prize.

PRIZES FOR DESIGN AND CONSTRUCTION.

The Grissell Gold Medal and £10 10s.

Eight Designs for a Riding School were submitted under the following mottoes:—

1. "Black Diamond": 3 strainers.
2. "Helios": 3 strainers.
3. "E Perseverantia Honor": 4 strainers.
4. "Jack": 4 strainers.
5. "Ilium": 4 strainers.
6. "Saddle": 3 strainers.
7. "Spero Meliora": 5 strainers.
8. Triangle and Circle (device): 3 strainers.

The Council have decided not to award the Prize this year.

The Henry Saxon Snell Prize (£60).

Three Designs were received for a Sanatorium for Consumptives from the following:—

1. Vincent Hooper.
2. H. Geo. Jefferies.
3. L. G. Pearson.

The Council award the Prize of £60 to Mr. Vincent Hooper [A.].

THE ASHPITEL PRIZE 1912.

The Council have, on the recommendation of the Board of Architectural Education, decided not to award the Prize this year.

THE TRAVELLING STUDENTS' WORK.

Owen Jones Studentship 1911.—The Council have approved the work of Mr. Noel H. Leaver, who was awarded the Studentship in 1911 and travelled in Italy and Norfolk.

Tite Prize 1911.—The Council have approved the work of Mr. George H. Foggitt, who was awarded the Tite Prize in 1911 and travelled in Italy.

Soane Medallion 1912.—The Council have approved the drawings executed by Mr. Piet de Jong, who was awarded a Certificate of Hon. Mention and £50 in competition for the Soane Medallion 1912 and has travelled in Italy.

Royal Sanitary Institute: Award of the Henry Saxon Snell Prize.

The subject given in 1912 for the Essay in competition for the Henry Saxon Snell Prize was "The Ventilating, Lighting, Heating, and Water Supply Appliances and Fittings for an Operating Room for a General Hospital." Ten Essays were sent in, and have been adjudicated upon by Mr. Edwin T. Hall [F.], Dr. Louis C. Parkes, and Mr. A. Saxon Snell [F.], who had the advantage of the

very valuable criticisms and suggestions of Sir Frederick Treves, Bart., G.C.V.O., who kindly acted as Consulting Referee. Acting upon the advice of the Adjudicators and the Consulting Referee, the Council have decided to divide the Prize of Fifty Guineas, giving one half to Mr. John Darch (Wandsworth), writing under the motto "Aseptos," and the other to Mr. H. F. V. Newsome (Manchester) and Mr. John G. Cherry (Manchester), writing jointly under the motto "Magnum Bonum." The Adjudicators consider that there are many excellent suggestions in these Essays, but there are some which they consider would prove unsatisfactory in practice.

Sir Thomas Graham Jackson, Bart., R.A.

At the Meeting last Monday the following letter was read from Sir Thomas Graham Jackson, R.A., in response to the vote of the Royal Institute congratulating him upon the baronetcy recently bestowed upon him:—

"Eagle House," Wimbledon: 11th January 1913.

DEAR MR. MACALISTER,—Will you kindly convey to the Royal Institute of British Architects my grateful thanks for their kind message of congratulation on the honour lately conferred on me. No congratulations can be more welcome than those of my brother architects, and I value this distinction all the more because I think that in my humble person some honour has been done to the great art which we all profess and love.—Yours very truly,

THOS. G. JACKSON.

The Safety of St. Paul's Cathedral.

Mr. Mervyn Macartney in *The Times* of the 13th January, replying to Sir Alexander Binnie's letter reprinted in the last issue of the JOURNAL, says that Sir Alexander Binnie must have been misinformed as to the facts on which the chief and central argument of his letter is based.

The facts are these (says Mr. Macartney):—The foundations of the Cathedral at the south-east corner are 21 feet 2 inches, and at the north-east corner 25 feet 10 inches below the level of the churchyard. I now find from the deposited plans relating to the Bill that the tramway tunnel opposite the south-east corner is 21 feet and opposite the north-east corner 21 feet 6 inches below the roadway to the level of the rails. Allowing that the roadway is 1 foot 3 inches below the level of the churchyard, and that the foundation of the tunnel is 2 feet 6 inches in thickness, I get the following figures—viz., the bottom of the tunnel at the south-east corner is 3 feet 6 inches below the foundations of the Cathedral and at the north-east corner about 6 inches above. But this is not all, for from the same source it appears that power to deviate is provided for, and such deviation might bring the subway within 20 feet of the apex of the structure. As regards the depth to which the subway may be sunk, deviation to the extent of 10 feet is allowed. Deviation of either type, even if kept well within these limits, would be with danger, but the latter is unquestionably the greater. Experience teaches that with the best intention in the world engineers have exceeded deviation limits imposed by legislation, and that the excesses

* "Roma": Bryan Watson.

have subsequently been curtailed so as to conform to the requirements of the statutes. In the present case no subsequent rectification would put things right. The harm would have been done.

Sir Alexander Binnie appears from his letter of the 9th inst. to be familiar with the contents of the report of 1907 and the results of subsequent investigations made by myself in 1911.

If this is so he can scarcely support his contention that misapprehension appears to have occurred owing to trial borings put down within the Cathedral, and that the depth of the foundations of the walls and the main supports of the Dome go no deeper than a little below the Crypt level. In the report of 1907 it is clearly stated that "At the same time we had the foundations uncovered at different points, and found the footings were formed of three 12 inch courses of stone slabs with a projection of 2 feet, the level of the pot earth being about 4 feet 6 inches below the Crypt floor."

From my investigations made in 1911 I arrive at the figures given at the commencement of this letter. These were checked by Mr. Mott and his partner on behalf of the City Corporation, and may be taken as absolutely reliable.

Sir Alexander Binnie entirely ignores the danger, so strongly emphasised by Sir Francis Fox, that may ensue from vibration. As the terminus would be the most important on the L.C.C. system, the traffic would be practically continuous and the pounding of the two-deck cars at the cross-over incessant. It is a matter of daily observation that the vibration arising from the present comparatively light traffic is distinctly felt throughout the building.

The Home Secretary, replying to a question in the House of Commons, said he was consulting the National Physical Laboratory as to the possibility of their undertaking a series of tests with the object of estimating the amount of vibration caused by motor and other traffic at different periods of the day in the streets adjoining the Cathedral, and the effect, if any, on the fabric.

The Dean and Chapter of St. Paul's have issued an appeal to the Corporation and the City Companies for assistance in the work of strengthening the fabric of the Cathedral on the lines suggested by Sir Francis Fox in his recent report. Subscriptions are also invited from the public generally. The particular work of cementing the cracks by a new and effective method has already made satisfactory progress. The extent or cost of the remedial measures required cannot be determined at present, but it is thought that £5,000 will go some way towards meeting the more immediate needs of the moment. If a larger sum should be received the surplus will be devoted to the general maintenance of the fabric. Donations should be addressed either to the treasurer, Canon Alexander, or to the receiver, Sir John Riddell, Bt., Chapter House, St. Paul's, E.C., and any contributions placed in the fabric-boxes in the Cathedral will be used for the same object.

Exhibition of Fine Arts, Florence, 1913.

The Thirteenth Exhibition of the Association of Italian Artists will be held this year at Florence, from the 1st March to the 31st October. The

exhibits will consist of paintings, sculpture, and architecture—the latter by means of drawings or models. Works of foreign artists are admitted, but not more than one work of each may be exhibited. Foreign works are submitted to a jury for acceptance—sculptor-members of the jury judging sculpture, painters works of painting, and architects works of architecture. Exhibitors visiting the exhibition will be furnished with a card of identity which will entitle them to travel at reduced fares on the Italian railways during the continuance of the Exhibition. Exhibitors have free admission to the Exhibition. Instructions to prospective exhibitors may be seen at the Institute Library, and forms to be filled up by exhibitors and all other particulars may be obtained from the "Direzione dell'Associazione degli Italiani, Palazzo Strozzi, Florence."

University College New Buildings.

At a Meeting of the Senate of London University, held on the 22nd inst., it was reported that the Chairman of the University College Committee had received a further communication from the anonymous benefactor who a year ago presented £30,000 towards the erection of new buildings at that college for architecture, sculpture, &c. In this communication the original offer is restated in a more generous form—namely, to bear, under certain conditions, almost the whole cost of the erection of the buildings in question, in the hope that at an early date it will be possible for the University to complete the Gower Street frontage of the college. The offer was gratefully accepted, and the thanks of the Senate accorded to the anonymous donor.

The Chadwick Trust : Lectures on Hygiene and Sanitary Science.

The Chadwick Trust, founded in 1895, under the will of the late eminent sanitarian Sir Edwin Chadwick, K.C.B., has arranged for a series of Public Lectures to be delivered during this year in London and certain provincial towns. The object of the Trust is the promotion of Sanitary Science in all or any of its branches in various ways indicated by the Founder, or otherwise at the discretion of the Trustees.

The first of the courses of Lectures will be given on Friday evenings, February 7th, 14th, and 21st, at 8.15 p.m., at the Royal Sanitary Institute, Buckingham Palace Road, by Mr. H. Percy Boulnois, M.Inst.C.E., on "Hygiene of the Home." Sir William J. Collins, M.D., Chairman of the Trust, will preside.

In April, Dr. J. T. C. Nash will give three disquisitions on "The Evolution of Epidemics," to be delivered at the London County Hall, Spring Gardens.

In June, Dr. F. W. Mott, F.R.S., will give a course at the Royal Society of Arts under the title of "Nature and Nurture in Mental Development."

Among the lectures in contemplation for the provincial cities are those on "The Public Milk Supply—Some Criticisms and Suggestions from the Public Health Standpoint," by Professor Henry R. Kenwood, at Manchester; and on "Water Supply," with exhaustive con-

sideration of sources, collecting works, conveyance, and distribution, by Mr. E. P. Hill, M.Inst.C.E., at Birmingham.

Glasgow, Bristol, and other cities of the Kingdom will also be provided with Chadwick Public Lectures during the year.

All the Lectures will be free and open to the public, but will be of a character to attract post-graduate and advanced students of engineering, medicine, and other cognate Sciences. The Secretary to the Trust, to whom all communications should be addressed, is Mrs. Aubrey Richardson, 8, Dartmouth Street, Westminster.

Notice re Meeting of 3rd February.

The Meeting of the 3rd February for the President's Address to Students, Mr. Curtis Green's Criticism of the Prize Competition Drawings, and the Presentation of Prizes will begin half an hour later than usual—namely, at half-past eight, instead of eight o'clock.

St. Bartholomew's Hospital Surveyorship.

Mr. H. Edmund Mathews [F.] has been appointed Surveyor to St. Bartholomew's Hospital, in succession to the late Mr. I'Anson. Mr. Mathews, who was born in 1868, is the eldest son of Mr. J. Douglass Mathews [F.], with whom he is in partnership in the City, where he represents the third generation of the firm.

OBITUARY.

The late Thomas Henry Watson.

At the General Meeting of the Institute last Monday, Mr. GEORGE HUBBARD, F.S.A., Vice-President, speaking from the place of the Hon. Secretary, formally announced the decease of Mr. Thomas Henry Watson, District Surveyor for St. George's, Hanover Square. Mr. Watson, he said, had been a member of the Institute for over fifty years, having been elected an Associate as long ago as 1862. He was among the first batch of candidates who sat for the Voluntary Architectural Examination when it was first established in 1863, and he passed in the Class of Proficiency. In 1866 he again presented himself for examination in the higher degree, and passed in the Class of Distinction. In 1864 he was awarded the Soane Medallion for a Design for an Academy for the Study, Practice, and Performance of Music. As Student of the Royal Academy he carried off three Silver Medals, the R.A. Gold Medal, and a Travelling Studentship. In 1877 he was elected to the Fellowship of the Institute. Mr. Watson had served on Committees of the Institute and on the Statutory Board of Examiners. He had also filled various offices in the Architectural Association, including that of President in 1870-71. In conclusion Mr. Hubbard moved that the regrets of the Institute for the loss it had sustained by the death

of its esteemed Fellow be entered on the Minutes of the Meeting, and that a message of sympathy and condolence be transmitted to his widow and family.

Mr. W. HENRY WHITE [F.], who rose to support the motion, said he had had the privilege of working with Mr. Watson for seven years, and he should like to pay his personal tribute to the high integrity of his character and to the excellent way in which he studied in every detail the interests of his clients. He was a man who spent almost meticulous care upon detail in every part of his work; and anyone who had the opportunity of working with him could not fail to derive advantage from the association and to be helped forward in his professional work. As a friend he was always ready to do everything he could to help one in need, with a kindly word of encouragement or professional advice. The Institute had met with a severe blow by his death. He hoped that an effort would be made to secure for the Institute his Royal Academy Studentship drawings, and that they might remain with them as a permanent possession.

Mr. WM. WOODWARD [F.], in a sympathetic reference to the late Fellow, said he had known Mr. Watson for over forty years as a most kind-hearted gentleman, a lover of fair play, and a lover of his profession. To show how very much a man could put into a very small work, he invited the young men present to look at a building on the east side of Regent Street, where the late Mr. Watson had simply added a story. They would find there evidence of an artistic development very seldom found in one who had to carry out such a simple work. It showed how possible it was to put into a very small work thorough artistic feeling.

The PRESIDENT, in putting the motion, said that Mr. Watson was a very old friend of his own and of many other members present. He was a fine man, an admirable draughtsman, and an architect who had a genuine passion for his art.

Francis James Smith [Fellow, elected 1891], who died on the 27th December in his sixty-eighth year, served his articles in the office of Mr. Wm. Lee, was afterwards assistant in the same office, and later, in 1875, joined Mr. Lee in partnership, the business being conducted first at Gresham Buildings, Basinghall Street, and afterwards at 7 Queen Victoria Street. On the death of his partner in 1882 Mr. Smith carried on the business singly, removing in 1898 to Parliament Mansions, Victoria Street, Westminster. His principal works are: The Town Hall, Westminster (1881-82), extension of Hackney Workhouse (1882-83), extension of Shoreditch Workhouse (1882-83), restoration of Carleton Church, Cambs. (1887), Cottage Homes for 400 children at Hornchurch, Essex (1888-89), St. George's Baths and Wash-houses, Buckingham Palace Road (1889-90), Library and Baths and Wash-houses, Westminster (1891-92), Public Library, Disraeli Road, Putney, in competition (1899). As architect to the Board of

Guardians, Paddington, he carried out extensive works in 1899-1908, comprising the new Board-room and offices, the receiving and casual wards, and reconstruction and enlargement of the Workhouse in Harrow and Woodfield Roads, Nurses' Home, relieving offices, &c. He was the architect of the Baths and Wash-houses, Nine Elms Lane, in competition, for Battersea Borough Council (1899-1902); Warehouses, Great Guildford Street, Southwark (1902); Public Baths, Kingston-on-Thames, in conjunction with Mr. Maurice B. Adams (1907-8); for the St. George, Hanover Square, Guardians, their new Board-room and offices in Princes Row, and the extension of the workhouse in Wallis's Yard, Buckingham Palace Road, S.W. (1906-7); for the St. Leonard, Shoreditch, Guardians, their branch workhouses in Hazelville Road; Hornsey Rise, and Alexandra Park Road, Wood Green (1908-9), and the new Infants' School, with drill hall and gymnasium, Hornchurch, 1911; and of the new receiving wards and extensions and improvements, Farnborough Workhouse, for the Bromley Union, Kent, Guardians (1912). He was also the architect of the Town Hall, now the Caxton Hall, Westminster; the Southwark Baths and Wash-houses; the Swimming Baths at North Camp, Aldershot; additions to the Kedington Workhouse, Suffolk, for the Risbridge Union Board of Guardians; the rebuilding of the Sackville Hotel, Bexhill-on-Sea; the Kursaal, Bexhill-on-Sea; the restoration of Great Bradley Church, Suffolk; the Free Church at Willesden, and many private houses, business premises, and other works in London and the provinces. He was one of the six architects nominated to compete for the St. Pancras Baths (1899) to cost over £58,000; and the Committee placed his designs third, out of about fifty, for the Chelsea Public Baths, eleven years ago. Latterly, Mr. Francis Danby Smith [A.] had been in partnership with his father, and is continuing the practice.

CORRESPONDENCE.

The Education of Architects.

The University, Sheffield, 10th January 1913.

To the Editor, JOURNAL R.I.B.A.,—

SIR,—With reference to the announcement made in the JOURNAL, dated 21st December 1912, to the effect that the Institute had admitted to alliance the South Australian Institute of Architects, it is particularly interesting to note that according to the new rules contemplated by the South Australian Institute this Institute is determined to give architectural education a sound basis. "... The articles of apprenticeship of pupils in its district will have to be registered with the Institute, and the date of registration will be taken as the date of commencement of apprentice-

ship. No articles will be registered until the pupil has passed the Junior Public Examination of the University or its equivalent." This examination, like similar examinations in England, is, I understand, conducted by a Board of Examiners each member of which is an expert in his own subject.

Whatever may be the details of the later examinations, we may surely congratulate the South Australian Institute on having given a sound foundation to the studies of the future architects of South Australia—a far sounder one, in fact, than that which exists in England.

For, quite apart from the probability that this University examination has a greater educational value than our Preliminary Examination, we must bear in mind the large proportion of youths who become articulated in England without passing any educational test worth mentioning, and who begin to think about the Institute Preliminary and architectural education when their apprenticeship is about concluded.

Surely the parent society is not too old to learn from its youngest child!—W. S. PURCHON [A.].

MINUTES. VI.

At the Sixth General Meeting (Ordinary) of the Session 1912-13, held Monday, 20th January 1913, at 8 p.m.—Present: Mr. Reginald Blomfield, A.R.A., President, in the Chair; 42 Fellows (including 17 members of the Council), 59 Associates (including 3 members of the Council), 24 Licentiates, 32 Students, and a large number of visitors—the Minutes of the Meeting held 6th January, having been printed in the JOURNAL, were taken as read and signed as correct.

Mr. George Hubbard, F.S.A., Vice-President, acting for the Hon. Secretary, having announced the decease of Thomas Henry Watson, elected Associate 1862, Fellow 1877, it was resolved that the regrets of the Institute for the loss it had sustained by the death of its esteemed Fellow be entered on the Minutes, and that a message of sympathy and condolence be conveyed on behalf of the Institute to the widow and family.

The decease was also announced of Colonel Frederick Robert Newton Haswell, of North Shields, Fellow, elected 1873; and Frederick Thomas Reade, Hon. Associate, elected 1877.

Mr. G. Alexander Wright, of San Francisco, Licentiate, attending for the first time since his election, was formally admitted by the President.

A letter was read from Sir Thos. G. Jackson, R.A., in response to the vote at the last Meeting congratulating him upon the baronetcy recently bestowed upon him.

Mr. F. S. Baker [F.], of Toronto, having read a Paper, illustrated by lantern slides, on CANADIAN ARCHITECTURE, a discussion ensued, and on the motion of Mr. Herbert Baker [F.], of South Africa, seconded by Mr. J. G. Colmer, C.M.G., a vote of thanks was passed to the author by acclamation.

The Deed of Award of Prizes and Studentships 1913, made by the Council under the Common Seal, was read by the Secretary, and the sealed envelopes bearing the mottoes of the winners were opened and the names declared.

The proceedings closed and the Meeting separated at 10 p.m.



ADDRESS TO STUDENTS.

Delivered by the President, Mr. REGINALD BLOMFIELD, A.R.A., at the General Meeting of the Royal Institute, Monday, 3rd February 1913.

ON the last occasion when I had the honour of giving an address in these rooms I ended on that subject of perennial interest to all of us—the high calling of Architecture, the fascination of that art, its claims on our enthusiasm and unremitting study. But on the other hand it is not an art to be undertaken lightly, and I am going to offer you this evening a few suggestions on the spirit in which you should approach the work of your life. You may recollect the catalogue of good qualities which the older writers, borrowing from Vitruvius, used to insist upon as necessary to the architect. You may recall De L'Orme's fancy portrait of the good architect and the bad—the good architect a compendium of all the virtues, the bad a villain and a fool; pleasing but irrelevant fancies of no material bearing on the training of an architect, except in so far as they point to a high ideal of the art. But, gentlemen, I take it for granted that though you are taking up architecture as your livelihood, you will look upon the calling of an architect as something higher and nobler than a mere money-making business. I take it also that you have that enthusiasm which is the privilege and prerogative of students in all ages. Without it the labour of study becomes mere drudgery, sterile and unprofitable; with it you can face cheerfully the severe gymnastic of your training, for I need not conceal from you that to arrive at any mastery of architecture your training must be serious and prolonged. A mere smattering of knowledge is useless. You have to attain a technique that makes greater demands on the intellect than that of any other art. The standard of attainment steadily rises, and the work of the architect tends to become more and more specialised. The days are long past when some bold and skilful designer was both architect and engineer, and though you must in your training devote yourself to learning all about architecture that you can, you will probably find as you go on that the force of circumstances will tend to drive you into specialising in one direction or another.

That, however, you may well leave to the future. Your business at present is to fashion and complete your armour, to acquire a practical knowledge of the resources of your art, and the skill of eye and hand to interpret the visions of your imagination. For the architect, alone among artists, is brought up against the rude test of facts, and he must be full of resource and full of knowledge, with more than a nodding acquaintance with those technical sciences which materially affect the design and disposition of buildings. I need not dwell further upon the extent of the studies that you are bound to undertake; perhaps you are already painfully aware of it. Rather, I would call your attention to certain pitfalls that lie in wait for the impetuous and the unwary. Some of us, looking back on our own student days, can recollect wasted effort, because for want of guidance we sometimes wandered off into a cul-de-sac, which might have been avoided had the object of training been clearly realised. The curriculum was overloaded and bewildering, and too often degenerated into simple cram. Students of this

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generation are more fortunate, because the ground has been cleared for them in this regard. In recent years the whole object of the Institute, in its educational reforms, has been to make the training of architects more intelligent and intelligible, and to direct the student to the understanding of the subject that he studies, rather than to the accumulation of scraps of knowledge.

In the first place, I would urge all students to make their ground good as far as it goes. In construction you are not merely to learn by heart the formulæ for the next examination; what is vital is to understand the why and the wherefore, to realise that the stresses and strains with which you wrestle, though expressed in technical terms, are not mere abstractions, but the result of the interaction of physical forces and the physical properties of materials. You should use your imagination as well as your intellect, and clothe the dreary figures with concrete instances. Though you should not rely on it without detailed verification, you should cultivate an instinct for construction—an extra sense, as it were, of what is sound and unsound in building, such as builders of the old school used often to possess in a very high degree. That instinct was the result of experience and experiment in building, of close observation of facts, of subconscious processes of thought, not less valuable because never set out in precise terms. You must recollect that an architect, in superintending his work, depends on his eye; and a quick and well-trained eye will detect defects of workmanship and construction at once that would be passed over by a loose observer, and it is essential that you should cultivate, from the first, quickness and accuracy of observation, and a sound, critical judgment of the quality of work. The architect should be, like Ulysses, "*πολύτροπος, πολύμητις*," full of experience and resource, for he it is who is responsible, and, if difficulties occur, he is the man who has to find the way out.

In your studies in history I would offer the same advice. Beware of the text-book, with its categories, its schedules, its quite hypothetical classifications. You want to get at the facts; but you want them not as a collection of dried anatomical specimens, but in order to trace the relation of fact to fact, to understand their origin and development, to place them in touch with the large movements of civilisation, and if in your reading you have this constantly in view, you will in time penetrate through the screen of details to the broad principles that dominate them. Architecture will present itself to you as a living art of immemorial age and descent, and also of boundless possibilities in the future. Your readings in history will supplement your practical study of the art, because they will enable you to realise, however imperfectly, that behind the visible expression of architecture great forces have been and still are moving, and you will learn to think in terms of architecture instead of repeating mere parrot phrases of design. There have been produced in recent times, and by various writers, very good books on architecture, but there has also sprung into existence, not only in this country, but on the Continent, a violent eruption of books on architecture which are not books, but compilations of letterpress barely sufficient to float interminable collections of photographs, mere ha'porths of bread to an intolerable deal of sack. I incline to think that these industrious efforts have retarded the advance of architecture, because they have concentrated attention on its details to the neglect of its organic structure, and have produced in the public a passion for archaeological sentiment and revivalism which is quite remote from any real appreciation of the art. My advice to you is not to rely on photographs, except as reminders of work you have seen and studied; you will learn more by the notes and measurements of actual work that you take yourself than by a whole roomful of photographs. I am glad to say that the excellent measured drawings submitted year after year for the Pugin Studentship prove that some of you are fully alive to this. Those who have been to all this pain and trouble will reap their reward in later life.

A word on literary style. My colleagues will pardon me, I hope, if I suggest that enthusiasm for the practice of our art has sometimes led to the neglect of literary studies. Now I am not urging you to add to your burdens the systematic study of literary style. To some extent that should have been done before you entered your technical training, but it will not do for you to ignore it completely. Occasions will arise in which it will be necessary to express yourself in clear straightforward and logical English. Failure to do so is due to two causes: confused thinking, and a certain unwillingness or inability to say a plain thing in a plain way. As a matter of self-training, you should learn to think your ideas through, and study in your leisure the masters of English prose, and I think you will find that the finest prose is like the finest architecture in its rhythm and restraint, and in its austere simplicity of statement.

Drawing as an instrument of thought and analysis is all-important. Some students draw too little, and others perhaps too much. The important thing is to be clear why you draw at all. (I am talking, of course, of the training of students in architecture, and not at this moment of drawing in general.) Now, the object with which an architect, in his actual practice, makes sketches and notes of a building is to carry away an accurate record of the facts of that building. He will put down all that is relevant, partly in sketches and measurements, partly, maybe, in writing; but he will not waste his time on anything that has no bearing on the subject. Your attitude when you are making drawings of buildings for the purposes of your training should be the same. You should make it your business to master the meaning, the purpose, the construction of the building, or detail of a building that you are studying. Sketches, however rough, provided that they are accurate, are of more value to you than the most slashing black-and-white or the most elegant water-colour. I have noted sometimes, in students' drawings, an evident anxiety to make the drawing itself attractive, and a fondness for details because they are picturesque and sketchable; but the architectural student should recollect that he is not out for the purposes of the painter. He may take his holiday and indulge himself in a landscape or the like, but the object of his labour should be the critical analysis of the building he is studying. Incidentally he will acquire in this way a quickness and accuracy in seizing and presenting architectural forms which will be invaluable to him in practice; and in all drawing, whether it be of these technical studies or the drawing that is common ground both to painter and architect, the object should be to grasp the essential characteristics of form and present them clearly and faithfully. I recollect once sketching a certain town-hall in company with a clever but somewhat impetuous draughtsman. When I was still labouring at the proportions of my building, my friend had completed a very taking sketch of the whole; unfortunately it was one bay short of the proper number.

And now we come to what is, after all, the end and object of your training, the development of your power of design: for I include in that your knowledge of construction and applied science, your knowledge of the architecture of the past, your power of draughtsmanship, as all of them subsidiary to the special function of the architect—Design. And here I would raise a question for the consideration of our schools, and that is, how far it is desirable, or even possible, to train students in a variety of styles. The training of our students a few years back proceeded on the assumption that it was both. It was held that an architect should have a smattering of all the known styles, in order that, when called upon to do so in practice, he could turn his hand to any. Text-books of styles were a burden to us; Gothic architecture was divided up into sacrosanct periods, which now appear in the guide-books in all the degraded abbreviations of "Dec." and "Perp."; and as for Neo-Classical, the result was what was genially described as "Free Renaissance," but was, in fact, an unlicensed orgy of sketch-book details, ill-understood and misapplied. I do not believe this is the way to train a student to design at all, because it disregards the first high principle of architecture, and indeed of all art—that Art

is the expression of personal emotion under conditions; and that emotion which expresses itself indifferently in half a dozen different manners must be a very thin affair. It does not convince the designer, and if it does not convince him it is not likely to convince anybody else. It cannot too often and too strongly be insisted on that Art is not a go-as-you-please affair, nor is it the work of anybody and everybody. It must be founded on strong individual preferences, definite idiosyncrasies, and a genuine aptitude for this particular mode of expression. However, this is more a matter for the masters, and to you I will only put it, that it is better to know one period or manner well than half a dozen badly.

What I would suggest to you students is that in design you must watch yourselves with such critical detachment as you can compass; try to discover, so far as you are able, which way your own idiosyncrasy lies, how you can most readily and *sincerely* express, in terms of architecture, your conception of the problems before you. You will find, it may be, that certain forms of Neo-Classic are more intelligible to you than other manners. If that is so, and subject to certain cautions which I shall offer you, you should study not only that particular manner itself, but all round it, so that you may learn its place in architecture, how it arose, what are its resources, what, in so far as you can reach to it, is its informing spirit.

The caution that I would offer you is not to be in a violent hurry to be original. Architecture is much too old and great an art to lend itself readily to originality. It is fenced in by conditions and limitations which you are bound to observe; and the originality you should seek for is not that of the inventor of new and unheard-of shapes and forms such as are exhibited by the Cubists and the acrobats of Art Nouveau, nor is it to be sought in brilliant caricatures of well-known features, which arrest the eye, it is true, but pay the penalty by going out of fashion in due course. The originality you should aim at is that of the great masters of the past, who used the forms and phrases that they found to hand, but applied them with a richness of invention and resource that doubled their possibilities. You should found yourself solidly on the best traditions of the past, whatever bold flights of invention you may risk in later years. In your student days your object must be to master thoroughly your technique, in order that the ventures of after-life may not fail for want of the knowledge of the facts and resources of architecture. I would urge you also not to study the fashion of the day too closely. Your object should not be immediate success and the quickest road to it. It may be that you will be driven to bow the knee in the House of Rimmon, but the least you can do is to nurse the faith that is in you, and endeavour to acquire a standard of judgment of your own. Your aims and ideals of architecture should be far beyond the narrow area of fashion, and there is only one road to that commanding position, and that is the patient and persistent study of the masterpieces of the art, and the firm conviction that architecture is an art to be taken seriously—not merely a business of which the sole object and criterion is immediate success.

I come back, then, to where I started—that the pursuit of architecture is not to be lightly undertaken. But I now add that those who take up the art in the right spirit will have their reward, I hope, in plentiful opportunities for the exercise of their skill; anyhow, in the enjoyment of one of the finest of the arts, and the art most intimately allied with the history of the human race.

This, gentlemen, ends my sermon. The criticism of your work has been entrusted to the very capable hands of Mr. Curtis Green, and I will now call on Mr. Green for his address.

REVIEW OF THE DESIGNS AND DRAWINGS SUBMITTED FOR THE INSTITUTE PRIZES AND STUDENTSHIPS 1912-1913.

By WILLIAM CURTIS GREEN [*F.*].

Read before the Royal Institute of British Architects, Monday, 3rd February 1913.

THERE are two sorts of criticism—constructive and destructive. I hope that what I have to say to you is the former. Likes and dislikes I shall try to avoid: they are often matters of temperament, or subject to change. I shall very likely fail to appreciate individual points of view, for though we are all travelling the same road we none of us view it from just the same plane or quite the same angle; the goal is no fixed point; we ascend one height to be faced by another, and if the vocation is ours there is no standing still. During the journey we shall receive some raps over the knuckles and many encouragements. The test of these competitions, as indeed of life, is one of character as well as of talent. The man of little skill but with the root of the matter in him will make rapid progress in the exercise of submitting his work for comparison with others more advanced than himself. The man of talent who proves for himself that there is plenty of room at the top, will learn also that there is no room for him to sit down.

The number of entries this year are unusually large, and the competition for most of the prizes exceedingly keen; it is impossible therefore to mention all the work submitted, or to show on the screen more than a tithe of the good things in the exhibition.

THE MEASURED DRAWINGS.

I propose to begin with the Measured Drawings, passing on to Design. There is some danger that young students in their eagerness to begin the preoccupation of their lives, *i.e.* design, may approach it insufficiently equipped. We must go back a long way in the history of architecture to find any justification for neglecting the study of old work, and we have a long way to travel forward before it will be safe to follow that early precedent and confine our attention to new. There is much to learn from our masters and fathers in architecture; hero-worship is one of the liveliest factors in our own development and that of our art, but we shall find as we grow older that the bases of our hero's achievements lie in his knowledge of what has been done by the masters of architecture. His mastery and resource are the outcome of no heaven-born originality, but a carefully cultivated gift of the spirit, an intensity of understanding acquired amongst the masterpieces of the art; if I may adapt the words of the Apostle Paul, he sees in all great architecture diversities of gifts but the same spirit.

For general advice on the method of studying old buildings I cannot do better than refer you to pages 1-5 of the Prizes and Studentships Pamphlet drawn up by the Records Committee, the members of which are, I know, very ready to help students in their work.

With regard to the work done on the building, I have two very simple suggestions to make: the first, to measure from a base or axial line, applies particularly to Gothic; the second is the use of sheets of scaled paper for all plottings on the spot. The exercise of setting out freehand to scale has several advantages: first, the result is more likely to be accurate, for in working to scale you tie and check as you go along, thus avoiding the horrible dilemma of finding on returning home that the dimensions will not work out; secondly, you are unconsciously forming a correct estimate of scale, and of the proportion of parts to the whole and to one another; thirdly, you are working in a way intelligible to other people who may have to use your notes; and, lastly, you will accustom yourself to the study of design unsupported by the drawing-board and

T-square. The work done on the spot is of more importance to you personally than the drawings done afterwards at home. For this reason considerable attention is given in awarding the Measured-Drawings Medal to the original survey.

I have dwelt on this aspect of the work because, although it has become a common saying that draughtsmanship is a means to an end, it is not so commonly realised that measuring is much more than an opportunity for the display of fine draughtsmanship. Fine draughtsmanship naturally follows in the series of enthusiasms which we all pass through; so long as drawings have to be made they must be of the best, the quality acts and reacts upon ourselves and upon the builders and craftsmen employed on the work to be done. As to method, do not be slovenly, learn the rules, go straight for the difficult parts; every one can learn to draw if he wishes to.

Fine draughtsmanship does not consist in the ruling of beautiful straight lines, but in an adequate presentation of the character and sentiment of the building. Thus it seems to me that the authors of the surveys of Southwell Minster and of Blenheim Palace, of the Manchester Town Hall and Cawston Church have achieved something; they have given the best of themselves, and are fuller men than before. They have analysed each a fine building, and, while giving due attention to all the difficulties of the delineation of mouldings, ornament, and sculpture, they have arrived at an understanding of the building studied and have made a valuable record.

Among such good work it is difficult to feel more than a natural inclination to one or the other; the prize has been awarded to Mr. H. C. Mason ("Pax") for his Blenheim drawings, an award with which no one will quarrel. The author has used a sensitive line, and consequently maintained the scale of the building; the shadows are indicated, but they are not sufficiently worked out by rule in lesser detail.

Mr. W. L. B. Leech ("Mitre"), who has received Honourable Mention for his wholly admirable set of drawings of the Chapter House and its vestibule, Southwell Minster, is a master of beautiful line used with extraordinary accuracy. The sheets are perhaps a little crowded, but are well arranged and form a complete monograph. In the drawing of Gothic mouldings and tracery care should be exercised in the use of compasses; Gothic is full of surprises.

Two students have measured Francis Goodwin's masterpiece at Manchester, the old Town Hall, now destroyed. The best of these, by Mr. Gordon Hemm ("X"), receives Honourable Mention, and is of value, and no doubt will be carefully preserved by the Manchester Corporation. The very complete survey of Cawston Church also receives Honourable Mention; the delicate and refined drawings of St. Mary Abchurch and the careful study of St. Vedast, Foster Lane, the latter threatened by the house-breaker, both show evidence on the part of their authors of enthusiasm and enjoyment in their work.

"Walworth" has disciplined himself by measuring Fishmongers' Hall. To him and to "Postman" I say, "Stick to it, and you must advance."

I must refer also to the measured drawings forming part of the work for which Mr. Butt has deservedly won the Arthur Cates Prize. The Strand front and vestibule of Somerset House have been, no doubt, measured before, but I do not recollect ever seeing drawings of so much feeling for the subject.

THE PUGIN STUDENTSHIP.

The work for the Pugin Studentship, the blue ribbon for architectural draughtsmanship, is up to the standard of all but a very few years, so far as my memory goes; that is to say, it is not stamped by anything of outstanding merit, although a high level of excellence is maintained. The coveted prize is won by Mr. Paterson for a nice collection of capable drawings; Henry VIII.'s Great Hall at Hampton Court is admirably shown in the $\frac{1}{2}$ -inch scale drawings,

while the best of his sketches is that of the roof. We have learned to expect the drawing of a sedilia, a work of incredible labour, and are not disappointed, but surely all this class of work has been recorded now. Might not students turn their attention elsewhere to mediæval carpentry—roofs and floors, staircases and lanterns, for example?

Mr. Joseph Hill has worked hard, and shows a fine combination of qualities—thoroughness with some freedom and go which should carry him far. The Chapter House at Wells is the central piece; it is a question whether the rough pencil-sketches are of sufficient interest to justify their position on the sheets; his drawing deserves the Honourable Mention awarded it.

It would be hard to find a pleasanter example of sixteenth-century brickwork than Eastbury Manor House, Barking. Mr. Leathart has made a painstaking study of it, and it is to be hoped he will complete the survey. Mr. Leathart is more at home with the pencil than with the brush. In measuring a bay of the Angel Choir at Lincoln, Mr. Peake Anderson has concentrated himself on one of the most magnificent examples of thirteenth-century art in the country, and is not likely to regret the time so spent. In the distant future we are assured that no one will work for prizes and no one will work for fame. In the meantime students must realise that a certain amount of importance is attached to the recording of work that has not been too frequently measured and published in past years. Mr. Anderson's drawings are dated, and the later ones show a marked advance on his earlier work.

Mr. F. E. Howard, who also receives Honourable Mention, has the essential quality of accuracy; so far as one can judge, the drawings of screens at Norwich, Southwold, and Attleborough leave little to be desired. The range of subjects chosen is rather late; they have the merit of being of one period, or, some may think, the demerit of suggesting a limited outlook. I prefer to think the former, and I believe that the obvious faithfulness of Mr. Howard's work will have good fruit in the future. Mr. Lewis and Mr. Powell are, I imagine, beginners; they are comparable in so far as both show taste in the choice of subject and in the medium used.

THE OWEN-JONES STUDENTSHIP.

For finished draughtsmanship the drawings submitted this year for the Owen Jones surpass anything in the exhibition; so high is the standard and so equal the merit that of the four competitors one receives the prize and the remaining three Honourable Mention—a circumstance surely unique in the annals of the Institute. It is difficult to commend where all are so excellent. The drawings that appeal to me most personally are those of the decorative artist rather than of the architect. Mr. Huggill's drawings of the Sala Piccolomini, Siena, for purity of colour and accuracy of tone are irresistible, while the sheet of stained glass from Chartres is no less excellent. Comparing this student's presentation of the Lower Church at Assisi with that of Mr. Walter Keeseey adjoining, one is compelled to the belief that Mr. Keeseey's is the truer rendering. His are masterly drawings, and they are supported by a valuable key section of the whole church and a sheet of details. This student shows also two sheets of the use of coloured marbles from Rome, Florence, and Venice. Mr. Beaumont's studies of glass are superb, so also is the little drawing of the ceiling of the Villa Madama, Rome; some of the drawings are in oils. Mr. William Harvey's collection of Byzantine mosaics is a fine exercise in architectural colour decoration, and I think the terms of the Studentship are most fairly interpreted by awarding the prize to Mr. Harvey. This student has made a complete study of the Dome of the Rock, Jerusalem. He has chosen to treat it diagrammatically; a legitimate treatment, yet one sacrificing delicate modulations of tone as affected either by the technique of mosaic or by light playing upon rounded surfaces.

THE TITE PRIZE.

We now come to the object of our desire, Design. It is the considered policy of the Institute to encourage the study of pure design. It recognises that the student must have a close season if he is to develop the gift that is his. For a time he must be preserved from the problems that tax the utmost powers of the practising architect; the confined and awkward site, rights of light, building by-laws, out-of-the-way problems of construction—any or all of these the clever student is capable of facing, but he can do so at too great a cost. When he has mastered the elements of design and trained his eye and brain to seize upon the essential factors of a problem, these things are another matter. The common obstacles and pitfalls of practice will have no real terrors for him; they may, perhaps without his appreciating the fact, become his friends, for the architect from whose practice such things are banished might become as uninteresting and as dull as the man with a regular income rising annually to be crowned in due course with a comfortable pension. Those who bewail these impediments in the way can reflect that there have always been men to rise above them, men who have produced architecture all the time, and that the best way to help the student is to discourage him from embarking on private practice prematurely.

The subject for the Tite Prize this year is the Façade of a Royal Palace in a city, approached by a wide avenue, designed according to the methods of Palladio, Vignola, Wren, or Chambers. The prize was founded by Sir William Tite for the study of Italian architecture. The proviso as to the principles to be observed has always been a matter of concern to the student. When I entered this competition twelve years ago, I was then, as I am now, in love with that great master of architecture Bramante, and I borrowed and no doubt my design dimly reflected some of his peculiar attributes. I remember feeling some resentment at learning on an occasion similar to this that my work was ruled out of court by the judges. Some such feeling may possibly be aroused this year by the swing of the pendulum, resulting in a less strict interpretation of the conditions. Personally I think the interests of architecture are best served by following the spirit rather than the letter of the law. The method of Wren, for instance, is Italian by way of France, and all have their bases in antiquity. On the other hand, the man who breaks bounds is running risks, and it is wisest to accept the conditions as they stand and make the best of them.

The design by Mr. Cyril Farey ("Palladio") has won the prize and is by common consent the ablest in the room. It is a work of imagination, pleasantly original, without offending any of the canons of the law. The drawings are beautifully rendered, indeed the draughtsmanship and ornament on the $\frac{1}{4}$ -inch scale detail give a French flavour which the general design does not possess. The central feature of the elevation is perhaps rather overpowering for the plan. The absence of meaningless applied pilasters is highly commendable and is a step in the right direction, and the long balconies are of great value. The detail drawing is a clean study, though the appeal is foreign to our temperament and affections.

I think if we were to make a general practice of defining the values of elevational drawings by casting the shades and shadows by the rules of sciography, the quality of our street architecture would improve. Those who do this will very likely be held up as shining examples of the Beaux Arts methods of training, even though they deny, as does Mr. Whitelaw, any sympathy for French methods or tendencies in design. A witty American has said that "it is much easier to find a new way of being bad than to master the old way of being good." We are all intensely concerned with the traditional way of doing things; for the present our concern is with the preparation for achievement. Some people fancy that Paris is the only home of the Classic Spirit; whereas the Classic Spirit in so far as it is the disinterested search for perfection

knows no boundaries. Other people like to think all the virtues originated in these islands; they forget that English Gothic and Renaissance, while essentially our own, came to us by way of France. It is some consolation to remember that as a nation we have a splendid digestion, and have no need to be afraid of a little French cooking.

The work of Mr. Bryan Watson ("Roma") receives honourable mention for a restrained and monumental design. He has hardly faced the conditions in the right spirit, for the building is to be four stories high, and by omitting the lighting of the top story, or concealing it behind the parapet, he has considerably simplified the difficulty which others have squarely faced. This design does not escape some of the defects of its very high qualities: it is somewhat heavy and just a little dull. The roof should be raised a few feet to counteract the foreshortening which every elevational drawing is subject to. A facility in design by means of perspective diagrams would save students many similar mistakes.

Next to "Roma" is hung an admirable design by "Strike Sure." It is very English in character and pleasantly reminiscent of one of the ablest schemes submitted in the competition for the London County Hall; it does not perhaps quite hang together, suggesting rather a side than a front elevation; possibly the whole of the centre should have been treated with detached columns. The design by "Juvenis" has an extraordinary family likeness to that of "Palladio"; I am tempted to say the voice is the voice of "Juvenis," but the hand is the hand of "Palladio"! If this is the case all honour to "Palladio" for a man of pluck and resource. The screening of the ground floor windows is a legitimate and pleasant device to give a monumental effect. A weakness of the design is felt in the treatment of the main cornice at the recesses at either end of the façade.

"Lorelli" has rather overdone the quality of breadth in the spacing of his bays, and marred its value by planting on coupled columns to bridge the voids.

"Green Seal" comes to grief in an otherwise dignified front in the fenestration, in the recess over the central entrance, good in itself but without visible means of support, and in the reckless introduction of ill-drawn figure sculpture, which would have been better omitted. The colouring of these plans was presumably done by candle-light.

"Circle's" otherwise careful design hardly realises the conception of a Royal Palace. The design by "Italy" is a scholarly piece of work; the method of showing it is rather unsympathetic and does not do justice to its good qualities. "Gragalah" needs to spend more time on composition; no amount of labour on the drawings can overcome primary defects. "Facilio's" design shows a lack of restraint; many features could be omitted with gain.

"Patrick" is on sound lines; the secondary divisions are a little mean and out of scale with the rest of the front. "Butterfly" gains variety at the expense of repose; the central divisions of the façade are not happy, the result again of insufficient study preparatory to beginning the finished drawings.

THE SOANE MEDALLION.

The Soane Medallion and Travelling Studentship is the most coveted of the Institute's prizes. The method and the medium are left to the individual; the work submitted, therefore, is some indication of movement, though one year may differ from another in the quality of its scholarship. The subject of this year's competition is a severe test of a man's capacity, particularly when, as must often be the case, he has only the evenings in which to tackle it. A terminal station, with the main frontage facing an open square or "place," and side frontages to wide roadways, twelve lines of rails and seven platforms are to be shown, and the building is to include all the varied requirements, excepting an hotel, of a great railway terminus; it is a big problem, and some men who have thought out the practical points do not appear to have had time or ability to spare for the architecture and *vice versa*: there is no precedent in this country for the student to turn to. King's Cross Station, the finest conception we have, is spoiled by its

wretched approach, and is, besides, behind the times in accommodation. We have, therefore, to look across the sea to Paris, Leipzig, and New York for the latest and most successful solution of a new problem. As architects we approach a new subject with open minds; for we know that architecture is a live thing with its roots in the needs of its day. We have to arrange the necessities of life so that they appear to have unconsciously found their proper place, so that the mind is neither distracted nor oppressed by them: it may even be that we shall lift up a little what we touch; that depends, not upon the time, but upon ourselves. The terminal railway station is the gate or one of the gates of the modern city, it is our particular problem and one of our opportunities. No one has seized upon the natural symbolism of two main features such as the great arches of King's Cross. For one of the first practical considerations of a railway station is that there shall be a division between those arriving and those departing; the second that the entrances and exits shall be conveniently arranged for horse and foot. The third inquiry is as to the right covering for the platforms. Minor considerations, such as receiving and despatching luggage, the position of the booking offices, waiting rooms, and the lesser but important conveniences of shops, refreshment rooms, cloak rooms, etc., arise, and fall into place on the solution of the larger issues; I shall not take up your time with these details. There are fourteen designs submitted and none of them have solved the entire problem. The winner of the prize, Mr. Whitelaw ("Solertia Ditat"), has taken the biggest view of the subject; instead of being embarrassed by the area of his paper, the sheets are too small for him. In speaking of his design I must preface my remarks by pointing out that it would be unwise for a student to presume on the unfinished state of these drawings another year. Mr. Whitelaw is fortunate, but he is an accomplished draughtsman—he has shown that on these walls on other occasions, even if evidence were lacking in these drawings, which is far from the case. The present work gives the impression that their author is living in the clouds, the ideal point of view for the architect, provided always that he retains enough ballast to come down to solid earth at the right times and in the right place. I hope Mr. Whitelaw will settle down for six months' serious study abroad and produce a splendid monograph on one great building.

This design exhibits great *architectonic* talent, and a certain rhythm that comes from the application of a set of units in design, and the connexion of geometric forms and proportions in which its author evidently delights. Personal likes and dislikes come in when we consider the flavour of a design; fortunately expression is not our strong point, yet to some extent we betray the mind that is in us. The poetical, the intellectual, the commonplace, the slovenly mind, leak through our reserve and find expression in form. Forgetting the broad bases of architecture we are unreasonably inclined to judge by the flavour and like and dislike at sight.

In their unfinished state Mr. Whitelaw's drawings are a little difficult to follow; for instance the approaches, while excellent in plan, are insufficiently explained in section: it would seem that direct access has been sacrificed to the monumental value of a fine podium 25 feet high, which cabs and foot passengers have to ascend; in the ideal city, the trains would leave and enter below the street level.

Mr. Whitelaw has accepted the popular view of a span roof over the whole station, but he has not, as in the case of Mr. Cable ("Registered Luggage"), been overwhelmed by it. The latest and most approved view in the United States appears to be to cover the platforms with low roofs open the entire length of the track. One man only, Mr. Bradshaw ("Rocket"), has been to the pains of discovering this. Mr. Whitelaw's concourse, as do many others, suffers architecturally from being under the same roof as the tracks, though he has made a feature of the three great arches marking the division.

Mr. Bradshaw ("Rocket") gets a well-earned Honourable Mention for his fine design; it seems to me to be marred only by one blemish: insufficient preliminary study—and that is a lesson it is only necessary to learn once. The errors are practical rather than æsthetic, and

could easily have been remedied; the cab approaches are inadequate and inconvenient. In a utilitarian work the practical person must be convinced that the architect has studied utility first. I have only one other contention with Mr. Bradshaw: it is a pity he did not make more of the concourse. As a composition some may think the central feature overpowering. I do not take that view, the eye is prepared for the great hall in the approaches, it is a suitably planned climax to a design of much ability pleasantly proportioned and refined in detail.

Two other competitors have treated the roofing of the platforms on low lines; both are designs of considerable merit. "Charge" has realised the character of a railway terminus, founding his conception on the great Verona gateways of San Michele's; the plan is unfortunately inadequate to the subject. The other, by "O.R.," shows an altogether delightful layout; the faults are again those of plan; he has evidently studied McKim's fine Pennsylvania station, New York.

Mr. Cable ("Registered Luggage") on the other hand, who receives Honourable Mention, has approached his task in the right way and has faithfully mastered all the practical factors of the problem; but having mastered them he has allowed his less robust architectural imagination to be submerged by the giant proportions of the utilitarian growth. The effect of this is more pronounced in the drawings than would actually be the case. The front is an admirably reserved and conscientious piece of design, it might be described as "moderate to excess"; the flanks are weak, they are too slight in character to satisfy the eye as an abutment to the tremendous roof which overshadows them. These drawings, particularly of the engineering details, are quite the best in the room.

"Queen's Knight" has manufactured difficulties in order to get his carriage entrances and exits into the centre of the plan; in other respects his design is well thought out.

"Peter Loo" sends an interesting composition founded on the supposition that the trains leave and enter at a high level; the levels, entrances, and exits are skilfully arranged. The plan is compact if a little tight, its parts are hardly sufficiently articulated. Aesthetically the Great Hall is somewhat narrow for its length to be a finely proportioned room.

The design by "City Gates" is admirable in plan: all the factors are duly weighed and rightly placed; the arcade of shops is a pleasant if not original feature. It is a question whether a circular domed hall is suitable to a railway station; such a form would bewilder passengers, who do not want to start a circular tour in the station.

"White Swan" has tackled his approaches well, but foot passengers would complain at the up-and-down-again method of approach. "Eclipse" shows careful work, but he has hardly come close enough to the problem; the façade might be that of a municipal building.

THE GRISSELL MEDAL.

The Grissell Medal is not awarded this year; no one has realised the idea of this studentship since Mr. Box sent in his interesting design for a great timber-roofed hall for a skating rink. If I had my time over again I should try to attain sufficient mathematics to master structural mechanics. Of the many lines of advance open to us, one is undoubtedly to know just what is wanted at a given place; we need to be able to move with freedom in the primary stages, and not to be dependent upon the engineer putting things right in the end. The Grissell Gold Medal is to encourage organic architectural design, and I am glad to know that the residue of the Jarvis Bequest is to be devoted to further this end.

THE SAXON SNELL PRIZE.

Three designs are submitted for this Prize. I had hoped to receive a report on them from Mr. Saxon Snell. The subject is a design for a sanatorium. Mr. Vincent Hooper gains the prize. Mr. L. G. Pearson's scheme is an extremely pleasantly proportioned block of building.

THE ESSAY MEDAL.

There remain only the Essays, which I have not read; I will conclude with a letter from Professor Lethaby, one of the judges:—

"The Essays were thirteen. We unanimously thought them a remarkably good lot, showing real work, thought, and interest. That recommended for first, entitled 'The Preservation of Ancient Monuments,' is most thorough, and forms a connected history from early times, with a very good list of books, &c. The essay on 'Railway Stations' is a wonderfully useful study of the development and present state of railway station design, again with a quite splendid bibliography. It is a study that all who have to design a big railway station would find most useful. Two or three others are entirely good and real pieces of work. The one point to make clear is that we want a *study* of a subject with *new work* on it, not mere notes on the 'Early English and Decorated Styles' from text-books. Five or six were truly contributions to knowledge. The competition is a success."

It will be remembered that this is the first year in the history of the Essay prize that Students have been encouraged to take a line of their own, choosing their own subject; in this way the Prize Essay may be a contribution to critical or abstract theory or to original research; in either case it is only awarded to work of high *literary* merit.

VOTE OF THANKS FOR THE FOREGOING ADDRESSES.

Mr. FRANK DICKSEE, R.A. [*Hon. A.*]: It is my very pleasing task to propose a vote of thanks, both to the President and to Mr. Curtis Green, for their very interesting and illuminating addresses to the students. The students, I think, are particularly fortunate in having a President who is not a mere signpost, as it were, indicating the way, but a leader—and a great leader—who has trodden the path which he urges you all to follow. I am sure that his words will inspire you with a sense of the dignity of the calling that you have chosen. I am sure, also, that he has impressed upon you the great responsibility that will be yours in the tasks you will have to undertake. In some respects, perhaps, it may be fortunate for you that the branch of art that you practise is, as it were, deep rooted in exact science, because I think you are thereby spared certain incursions and inroads and hostile demonstrations that divers hangers-on and camp followers, as I may call them, of the arts of painting and sculpture are inflicting upon us at the present time. These would rob us of the heritage of the ages, strip us naked to the skin, and then submit us to various diseased productions of imbeciles and maniacs. You are fortunate in that you are spared all this. The only example I can remember of anything of the kind which has assailed you, is in the matter that the President referred to, viz. certain efforts of the exponents of "l'Art Nouveau." But I think I am right in saying that in this country they have done very little harm, although abroad, especially in France and in Germany, the evil that they have wrought is very manifest. To come at once to my point, if I may identify myself with the students and claim to be one of them, I am sure I

voice their sentiments, and the sentiments of every one present, when I tender our thanks to you, Sir, and to Mr. Curtis Green, who, it seems to me, has given a most extraordinarily able criticism in his very interesting paper. We all followed his remarks with the greatest interest; and I, being—in spite of my grey hairs—perhaps the youngest student of architecture amongst you, and the most ignorant, followed those remarks with the greatest interest. I am very pleased to be informed that the students of the Royal Academy have made such an extremely good show in the competition, the results of which we see around these walls; and it is very gratifying to any member of the Academy to know that these schools are pronounced by such an excellent judgment as yours to be so efficient.

SIR LEWIS SELBY-BIGGE, K.C.B., Permanent Secretary of the Board of Education: I appear before you in the character of the best friend of the architectural profession, namely, the man who builds his own house—just as the amateur who makes his own will is the best friend of the lawyer—and I claim the privileges of a friend. If my education had been conducted under such kindly sympathetic and yet searching criticism as Mr. Curtis Green has given the students to-night, I venture to think it might have been more profitable, for I have never listened to a more admirable criticism of the work of students of any profession. He did say one rather unkind thing when he spoke of somebody being as dull and uninteresting as a man with a secured and regular income safely progressing towards a comfortable pension. That, gentlemen, is descriptive of the Civil Servant—and I belong to the Civil Service! I wish to second this

vote of thanks very heartily, not because I have any passion for lectures and addresses myself; though I may say I have attended more addresses in this hall in the course of the last twelve months than I have anywhere else in the course of the last three years, and with a great deal more satisfaction than any which I remember for a long time. I should not be so impertinent as to refer to what your President and Mr. Curtis Green have said upon the merits of the subjects which they were discussing. Your President's description of architecture as a living art of immemorial age and infinite possibilities I do not think could possibly be bettered. When he was speaking about originality, one thing occurred to me which I remember from my reading a very long time ago—because the uninteresting Civil Servant has no time to read anything at all!—and that was a very simple remark of Carlyle's, that the essence of originality lies not in novelty, but in sincerity. I cannot imagine that there is any art in which sincerity is more certain of making its mark, in which the sincere man is more certain of stamping his seal upon his product, than the art of architecture: and the vices of architecture, I imagine the President would agree with me in saying, are very largely vices of insincerity. It gives me special pleasure to second this vote of thanks, because the Board of Education, which I very unworthily represent, owe a special debt of gratitude to your President, Mr. Reginald Blomfield. For many years he has given us assistance in all sorts of capacities. He has been Examiner in our Art Examinations and in our National Competitions; he has been an active member of the Standing Committee of Advice for Education in Art since its constitution in 1911, and for the same period he has acted as Visitor for Architecture to the Royal College of Art, which, I am glad to see, has been not unworthily represented here to-night. He has also served us on numerous occasions when we have applied to him for special counsel and advice; and last but not least, he has consented to serve as a member of the Council of Advice for the Victoria and Albert Museum, which, I venture to think, is a position not unworthy of even his distinguished merit. Please do not go away with a wrong impression. Mr. Reginald Blomfield has rendered very great services to the Board of Education—and if Mr. Pease were here, I am sure he would say, only in better and more appropriate terms, what I am saying now, that we owe him a very considerable debt—but, at the same time, he is certainly not harnessed to the official chariot, nor is he the mouthpiece of the official oracle. You know your President well enough to feel quite sure that, in whatever capacity he is acting, he will say what he likes, when he likes, and as he likes, with the candour and independence which distinguish him! And as for harnessing, I do not think there is a man who could drive your President in a direction in which he does

not think it right to go! Seriously, I think our relations to this body, representing the great and learned profession of architecture, are almost a model of the relations which we should wish to see existing between ourselves and other great and learned professions; they are those of quite independent counsel and advice. I think if this Institute thought that it had anything to say which was for the good of the Board of Education, or for the benefit of education in general, it would not have the least hesitation in saying it to us in the most emphatic terms it could command. Those relations of confidence and candour are the most valuable relations which can be established between an official authority and an independent body such as your own representing a great profession.

THE PRESIDENT: I thank the Meeting for the kind way in which they have received this motion, and particularly Mr. Frank Dicksee and Sir Lewis Selby-Bigge for the generous terms in which they have proposed the vote. I should like, before I go further, to associate myself with them and to offer Mr. Curtis Green my personal thanks for his criticism, which is one of the ablest I have ever heard in this room. It was a fine performance and full of suggestion to our students. Mr. Dicksee is a very distinguished artist, and a warm friend of architecture, a man who has always been ready to help us in this Institute so far as his opportunity lay, and I can assure him that we architects sympathise deeply with our brethren the painters and sculptors in the onslaughts to which they are exposed by people apparently fresh from the madhouse! I think all trained artists will find that they have a solid residuum of support which will win through in the end and release them from these extraordinary vagaries. Sir Lewis Selby-Bigge began by under-rating himself. He had the fine courage to say he built his own house, and no doubt that enables him to attach very great value to our calling as architects! He also made deprecatory remarks about his own education; but he omitted to inform you that he was a distinguished student at Winchester, and was a Fellow of his College at Oxford; he is one of that excellent type of Oxford man, a fine scholar, one who proves his capacity in after life for handling men and affairs. Gentlemen, we all here appreciate very much the way in which he handled this subject of architecture; he showed that we have, in one of the greatest of our Public Offices, a representative who really understands the problem of architecture a great deal more than he allows. I would commend especially to you the remark that he made, namely, that at the base of all fine architecture is sincerity. We thank him also for what he very frankly said, that the great Department which he represents is always ready to receive candid advice, in so far as it is possible for us to give it, on matters on which we really ought to be experts.

Mr. Curtis Green also briefly responded.

CORRESPONDENCE.

"Beaux-Arts" Courses.

University College, Gower Street: 31 Jan. 1913.

To the Editor, JOURNAL R.I.B.A.,—

DEAR SIR,—The wording of the circular which has been sent out by the London "Beaux-Arts Committee" suggests that the scheme they are starting is something entirely new in London. May I be allowed to point out that such is not exactly the case. In October, 1911, a course of training in design for advanced students on the lines of the course in the Ecole des Beaux-Arts, Paris, was started at University College.

It is true that we did not call the Studio the "Atelier," and that we have not the assistance of eminent French architects; but on the other hand, our visitor is Dr. J. J. Burnet, A.R.S.A., who as a student passed with distinction through the complete course in Architecture at the Ecole des Beaux-Arts in Paris.

This year the course has been much interfered with by having to work in temporary quarters, owing to the pulling down of our old premises to make way for the new building for the School of Architecture of the University of London. That is now half built, and will be finished in June in readiness for the opening of next session in October.

F. M. SIMPSON [F.].

The New Delhi.

18 East Dulwich Road, S.E.: 28 Jan. 1913.

To the Editor, JOURNAL R.I.B.A.,—

SIR,—Among the readers of the JOURNAL there must be many who look forward to the "New Delhi" as the great architectural gift which the near future has in store for the world, and a majority surely will agree that in the planning and construction of what we trust will be among the fairest and most beautiful of cities Indian architectural tradition should be the guiding rule.

While the friends of architecture in this country will feel all confidence that good and wise advice will be given to the responsible Government Department by eminent members of this Institute, some of us feel a degree of uneasiness lest other than architectural considerations may have undue weight with those to whom such advice shall be tendered. We as architects are not concerned in any political aspect of the question, nevertheless we cannot but be influenced in the formation of our opinion on such a matter by a consideration of the effect upon the Indian mind of the introduction of a style at variance or out of harmony with native sentiment. In architectural matters, at least, it would appear inexpedient to obtrude unduly the Western ideal or to emphasise the power of the British Raj.

Lord Plymouth, a distinguished Hon. Fellow of the Institute, presiding at a lecture recently delivered by Mr. E. B. Havell, expressed the hope that buildings in the Renaissance style would not be

superimposed on the native art in the New Delhi. Mr. Joseph King, M.P., in a pamphlet entitled "Empire and Craftsmanship," expresses the opinion that, if the Government House be Renaissance or Classical, native Princes will follow suit in the building of their own palaces, which would indeed be a sad happening.

Evidently these gentlemen, among others in high position, entertain to some extent the fears I have ventured to express, and Lord Plymouth has stated that his name will be added to a petition to be presented to the Secretary of State for India on the matter. As one born in Old Delhi, I trust that the Petition will receive the support of many who feel a genuine interest in the New, and in that case we may well hope that such an expression of opinion will receive due attention, and strengthen the hands of those who seek to keep alive the flame of an ancient architectural tradition.—I am, Sir, yours faithfully,—A. J. CLIFFORD EWEN [Licentiate].

The "Architectural Review," New Series.

The *Architectural Review*, now entering upon its thirty-third volume, appears in a new and greatly improved form with the January number, the pages having been considerably enlarged so as to facilitate the introduction of new methods of illustration and to allow of the more adequate representation of the wide field that the *Review* is intended to cover. All the old useful features are retained, and there are given in addition sixteen specially prepared full-page plates reproduced from photographs. It is announced that this is to be a regular feature and that a similar number of plates will appear in all future issues. The illustrations throughout are excellent; great pains have evidently been bestowed upon their selection and manner of presentment, and apparently no expense has been spared in their reproduction. Among the principal contents, apart from the illustrations, are "Some Oxford Details," by W. G. Newton; "Iford Manor and its Garden," "Sanatoria for the Community," by various writers; and "Some Famous Buildings of Portugal," by Walter H. Godfrey. The frontispiece is from a clever etching by W. Walcott entitled "At the House of a Patrician." The *Review* in its new shape should be a great success, and credit is due to all concerned in its production.

Books Received.

- The Mediaeval Church Architecture of England. By Charles Herbert Moore. With 23 plates in half-tone and 149 illustrations in the text. 8s. New York and Lond. 1912. 15s. net. [Macmillan & Co. Ltd., St. Martin's Street, W.C.]
Structural Engineering. By A. W. Brightmore, D.Sc., M.Inst.C.E. With numerous diagrams. New and enlarged edition. 10s. 6d. net. [Cassell & Co. Ltd.]
How to Estimate, being The Analysis of Builders' Prices: Giving full details of Estimating for every class of Building Work. By John T. Rea. Fourth Edition, revised and enlarged, with over 400 illustrations. 8s. Lond. 1913. 7s. 6d. net. [B. T. Batsford, 94 High Holborn.]



[Photo. H. D. Leighton.]

FIG. 1.—GREENWICH HOSPITAL, KING CHARLES BLOCK: VIEW FROM RIVER.

GREENWICH HOSPITAL, KING CHARLES BLOCK: A NOTE ON SOME DIFFERENCES IN DETAIL.

By W. S. PURCHON [A.].

WHILE working at Greenwich Hospital with some students from the University of Sheffield it occurred to me that we might possibly be able to do some little investigation in connection with Mr. Gotch's Paper "The Burlington-Devonshire Collection of Drawings, with special reference to the Relations between Inigo Jones and John Webb" (*JOURNAL R.I.B.A.*, Third Series, Vol. XVIII. No. 10).

On Mr. Gotch's suggestion, therefore, we examined the details of the various parts of the King Charles block, and a short illustrated account of the results of these investigations, which were very carefully carried out by two of the students, Mr. J. H. Odom and Mr. H. B. Leighton, may possibly not be entirely lacking in interest. Not, indeed, that they prove anything new, but rather that they may help to demonstrate more fully and clearly that which is already known.

Let us examine for a moment the general plan of the hospital [fig. 2]. Of the two blocks nearest the river, the King Charles block is the western one. The eastern half of this has usually been stated to have been built by Webb from the designs of Inigo Jones, but the evidence of the Burlington-Devonshire drawings leads one to believe that Webb was the designer. The western half of the river front of this block was built early in the eighteenth century on similar lines, probably by Wren; the western half of the southern front was built by Campbell, and the long central part of the west front was constructed from Stuart's designs in 1814.

The west and north fronts of the Queen Anne block, to the east of the King Charles block, were built by Wren on the lines of the latter block. The south front was built by Campbell, but most of the eastern half of this block is the work of Hawksmoor, and contains a curious three-sided arch form in the front to the court. It should be noted that while fig. 2 [page 212] shows the general lay-out of the buildings correctly, it is incorrect in several minor details; the colonnades, for instance, shown crossing the internal courts of the blocks nearest the river do not exist.*

We may now consider some of the external details of the King Charles block. It will be noted that so far as one can tell from a casual inspection the design and detail of the two halves of the north or river front of this block are practically the same, the only striking difference being that in the eastern half the pediment is sculptured, whereas there is no sculpture on the western half [see fig. 1]. Sculpture also appears in the pediment in the centre of the east front of this block, and in the pediment in the centre of the east side of its inner court, the latter being the only example of sculpture in the courts to the blocks nearest the river [see fig. 3, p. 213]. The pediments of the Queen Anne block are unsculptured. The panel on the architrave and frieze under the eastern

* It is stated on a plan in the Works Department office at Greenwich that Campbell completed the west and east portions of the Queen Anne block, that Ripley worked on the south part of this block in 1740, and that the south-west corner of the King Charles block was rebuilt by Stuart in 1769.

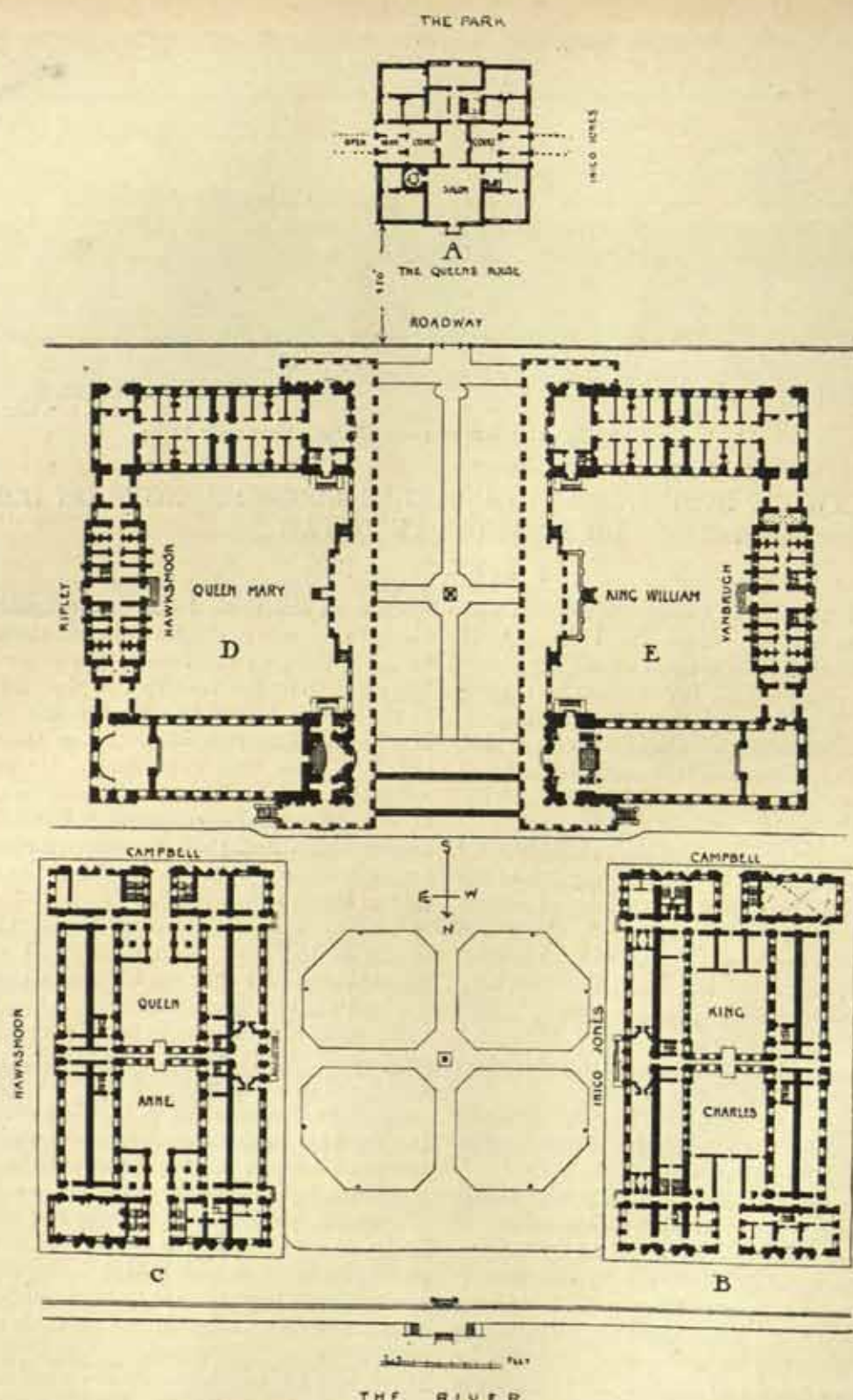
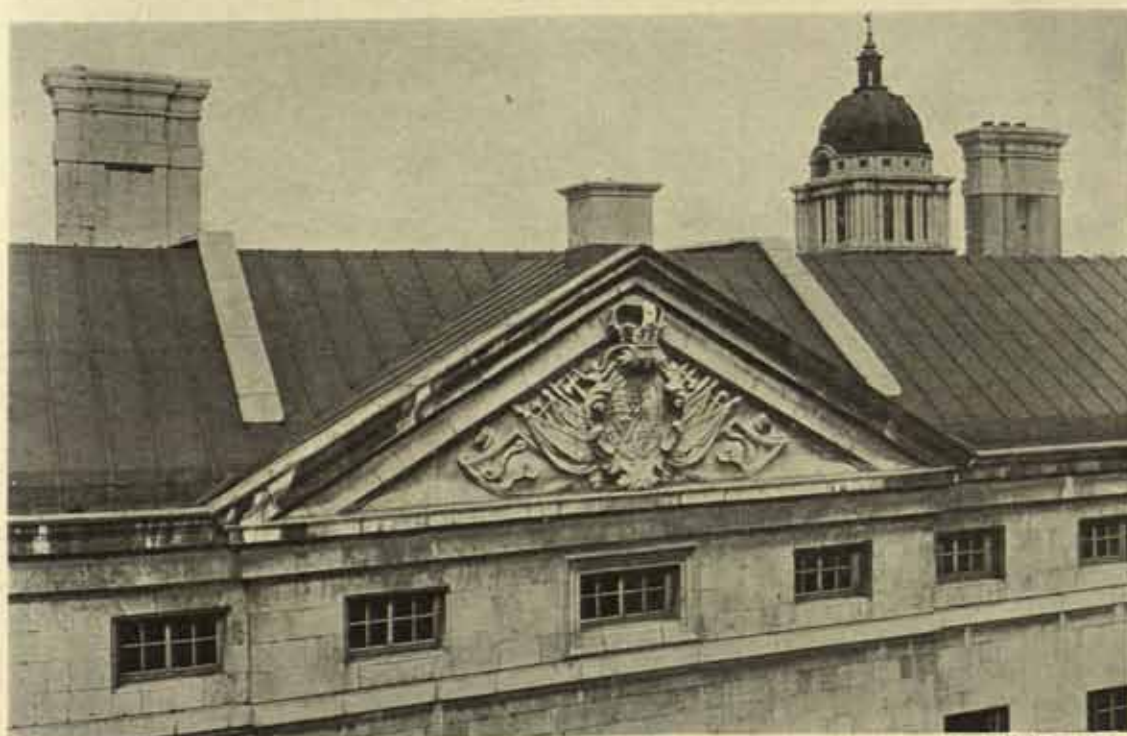


FIG. 2.—PLAN OF GREENWICH PALACE (AS EXISTING).
 From Belcher and Macartney's *Later Renaissance Architecture in England*.

pediment of the river front of the King Charles block contains an inscription of considerable decorative value, but similar panels under the western pediment of this block, and under both the pediments on the river front of the Queen Anne block, lack inscriptions. The central part of the west side of the King Charles block is much later work by Stuart (1814), and obviously differs in detail from the other parts of this block, the architrave to the main entablature, for instance, being without enrichments. On a more careful

The details of some of the enrichments of the main cornice, and of the inscription panel on the architrave and frieze in the eastern half of this block, differ from those of the enrichments on the same features in the western half. The cyma reversa under the crowning moulding has ornament differing somewhat in form in the two halves of the block, and being much more spread out in the western half (10-inch centres as compared with 4½-inch centres); the modillions in the eastern half are slightly different in front elevation from



[Photo. H. B. Leighman.]

FIG. 3.—GREENWICH HOSPITAL, KING CHARLES BLOCK: SCULPTURED PEDIMENT ON EAST SIDE OF INNER COURT.

examination, however, of the two halves of the river front of the King Charles block many other points of difference may be noted.

On the eastern half, for instance, it will be found that the enrichments on the mouldings of the main cornice are carefully spaced so that their centre lines agree [see fig. 10, p. 218]. This arrangement obtains on the three outer faces of the eastern half of the King Charles block, and on the whole of the south front.

On the western half of the river front of this block these enrichments are not arranged on centre lines, and the same lack of care in centering may be noticed in the main cornice of the two wings on the west side of the block, though to a smaller extent in the south wing [see fig. 8, p. 216].

those in the western half, and on the sides of the modillions in the eastern half the volutes have flowers in the eyes and the remaining spaces filled with ornament, whereas these features are plain in the western half.*

Again, the ornament on the mouldings to the inscription panels is somewhat different in type in the two halves of the block, and while that in the east is arranged to 3½-inch centres, that on the west is drawn out to 14-inch centres.

An examination of the capitals of the main order of the King Charles block reveals further differences, those of the eastern half having deeply-cut

* The ornament in the bottom moulding of the main cornice has four-petalled flowers in the south-west corner of the block, two-petalled flowers elsewhere.

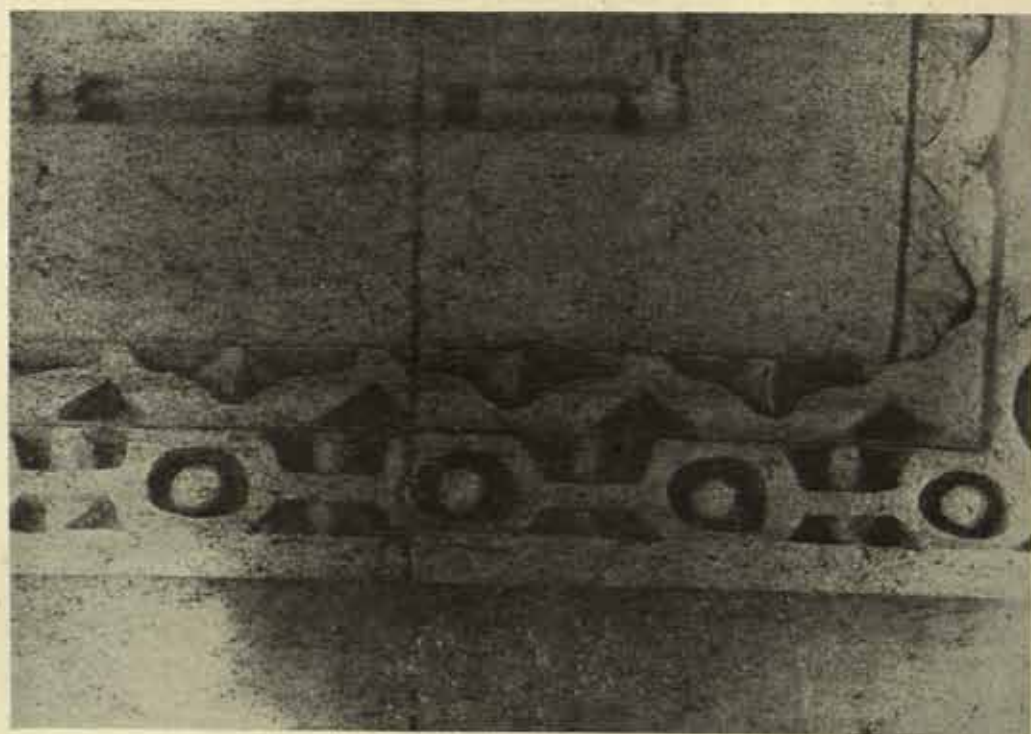


Photo. H. B. Leighton.
FIG. 5.—GREENWICH HOSPITAL, KING CHARLES BLOCK: DETAIL OF ARCHITRAVE
TO ATTIC WINDOW IN WESTERN HALF OF RIVER FRONT.

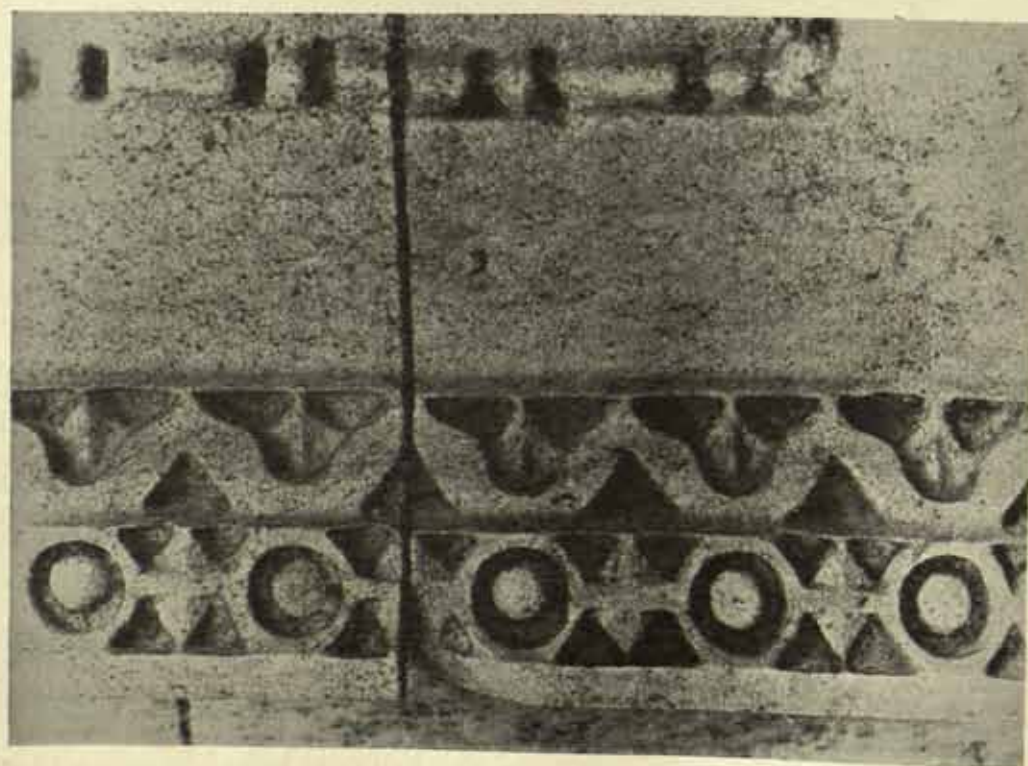


Photo. H. B. Leighton.
FIG. 4.—GREENWICH HOSPITAL, KING CHARLES BLOCK: DETAIL OF ARCHITRAVE
TO ATTIC WINDOW IN EASTERN HALF OF RIVER FRONT.

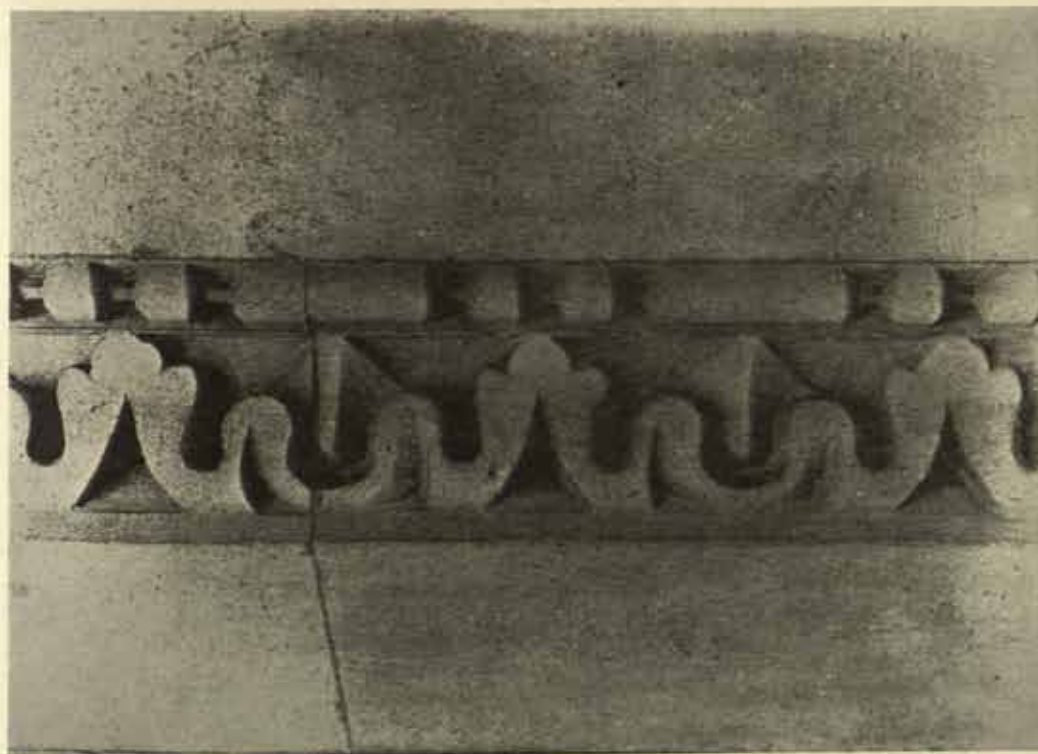


FIG. 7.—GREENWICH HOSPITAL, KING CHARLES BLOCK: DETAIL OF MOULDING TO PANEL OVER WESTERN PEDIMENT ON RIVER FRONT.

[Photo. H. B. Leighton.]

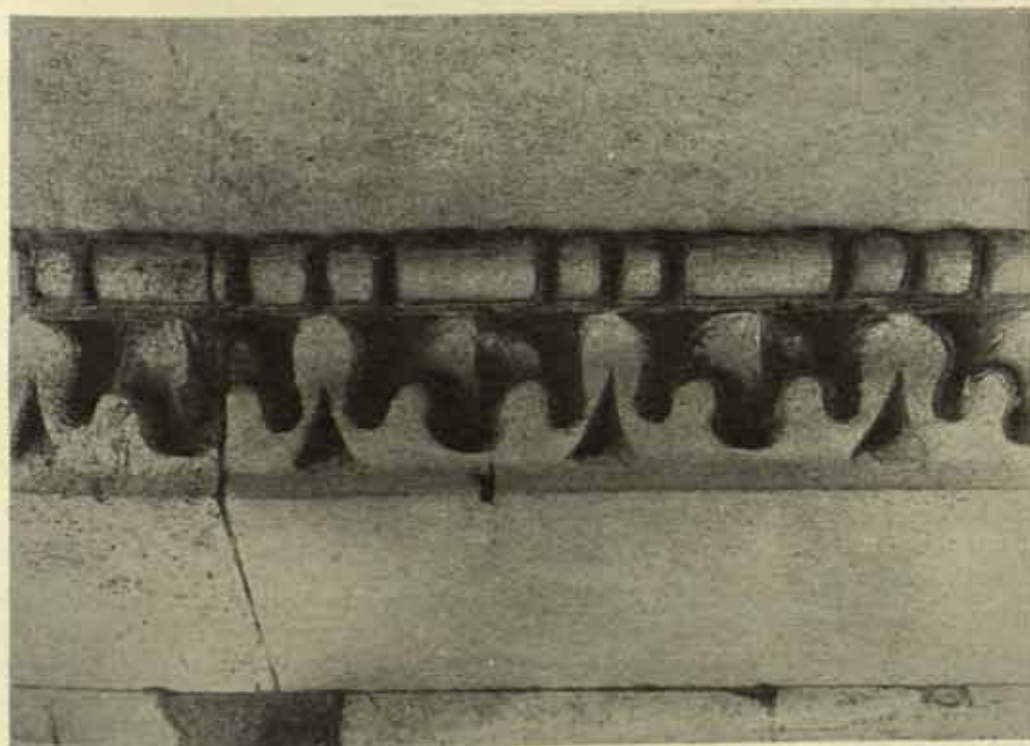


FIG. 6.—GREENWICH HOSPITAL, KING CHARLES BLOCK: DETAIL OF MOULDING TO PANEL OVER EASTERN PEDIMENT ON RIVER FRONT.

[Photo. H. B. Leighton.]

foliage, spiral grooves on the main stalks, and very little foliage on the upper part of the volutes, whereas those of the western half have foliage much less deeply cut, vertical grooves on the main stalks, and more foliage on the upper part of the volutes. In the western half all the stems of the

constructed in one block, whereas in the other capitals there is a joint at the top of the upper tier of leaves.

Some of these differences are shown in figs. 8 and 9.

Differences may also be noted between the window consoles on the east front and on the end



[Photo. H. B. Leighton.]

FIG. 8.—GREENWICH HOSPITAL, KING CHARLES BLOCK: ENTABLATURE AND CAPITAL OF PILASTER IN NORTH WING OF WEST FRONT.

main leaves are plain, whereas several of the capitals in the eastern half have leaf forms carved on the stems, and while the bars joining the pairs of volutes in the capitals on the western half are curved and pierced, these bars in the eastern half are, with one or two exceptions, plain.

Each of the capitals of the eastern part is con-

pavilions of the west front of the King Charles block. Those on the ground floor on the east front are carved with leaves overlapping in one direction only, no fruit, and a coil at the bottom, whereas those in a similar position on the west front have leaves overlapping in both directions alternately with fruit introduced, three buds in lieu

of the coil, and more elaborate ornament in the volutes on the sides. Similarly in the case of the consoles to the first-floor windows, those on the west front have their sides more completely filled with ornament and have richer foliage below.

There are differences, too, between the capitals

If, again, one considers the attic story of the King Charles block, it will be found that the architraves to the windows differ in different parts, those to the earlier work in the eastern half having ornament which is less "drawn-out" than that on the others.*



(Photo. H. B. Leighton.)

FIG. 2.—GREENWICH HOSPITAL, KING CHARLES BLOCK: CAPITAL OF COLUMN IN CENTRE OF EAST FRONT.

to the pilasters framing the first-floor windows on the eastern half of the north front, and those in similar positions on the west half, the former having larger volutes with less foliage on the upper part, broader and more richly carved stalks between the leaves, and more sub-divisions to the main leaves.

The ornament on the mouldings to the panels over the eastern pediment on the river front is, similarly, different from that on the panels over the

* It seems, however, that when the attic was erected over the south-west corner (probably by Hawksmoor) the detail of the window architrave was based on the earlier work. See also footnote on p. 211 to the effect that this part was rebuilt by Stuart.

western pediment, as in other cases the later ornament being more "drawn-out" than the earlier.

The differences between these ornaments are clearly shown in figs. 4, 5, 6, and 7.

In the cornice of the attic story in the eastern half of this block the dentils are $2\frac{1}{2}$ inches wide

heavy for the work below, was designed by Wren. The differences of detail noted above bear out the inference which may reasonably be drawn from the Burlington-Devonshire drawings, that Webb designed the attic. It would seem that when the western part was added, probably under Wren's superintendence, the details were slightly modified.

The southern fronts of the King Charles and Queen Anne blocks are attributed to Campbell; but while he probably carried out most of this work it must be remembered that complete drawings of the eastern half of the King Charles block are to be found in the Burlington-Devonshire Collection, and that the south front as carried out is very similar in the upper part to that shown on the drawings, the main difference being that small windows have been added below the main cornice.

On the ground floor, however, an arcade is shown on the drawings, whereas in the building there is a doorway with a small window on each side in the projecting bay. In the building this projecting bay is narrower, and the large window on each side of it more richly treated than on the drawing [see figs. 10 and 11].

It has already been noted that some of the detail of the western part of the south front follows that of the eastern half rather than that of the western part of the river front.

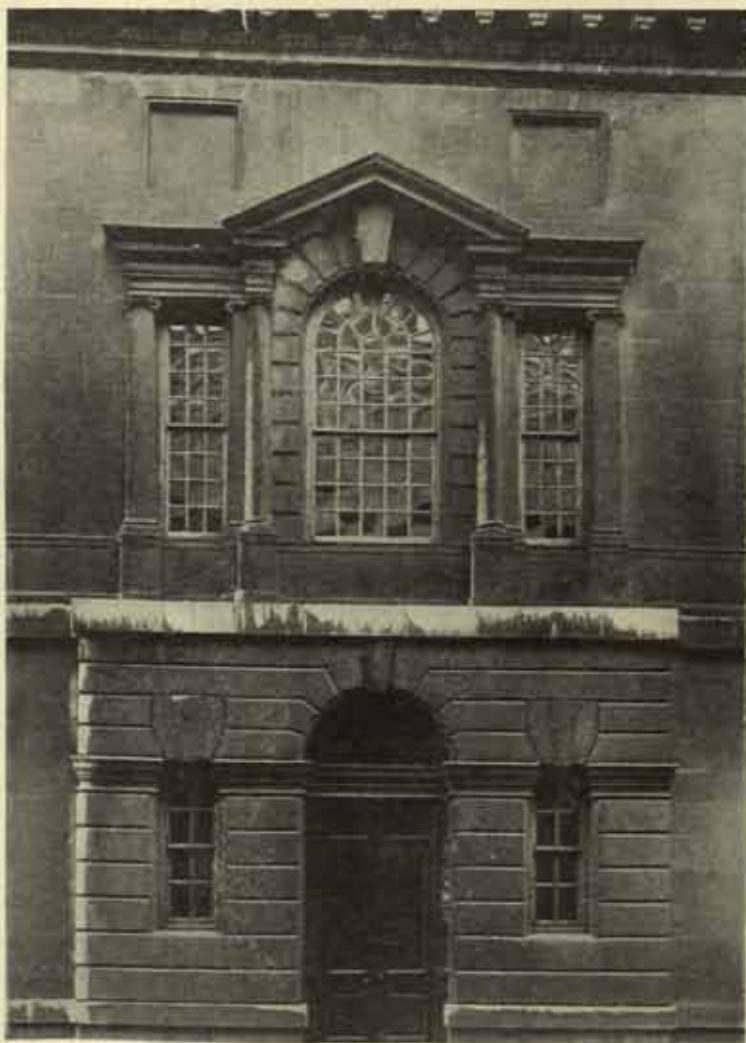
To sum up the general effect of these notes, it seems that, excluding the western part of the south front and the central part

of the west front of the King Charles block:

(1) The details of the eastern and western halves of this block differ.

(2) The detail of the western (later) half is more "drawn-out" and less spirited than that of the eastern.

(3) The detail of the attic story (eastern half) is more on the lines of that of the work below,



(Photo. H. B. Leighton.)

FIG. 10.—GREENWICH HOSPITAL, KING CHARLES ELOCK: CENTRAL PART OF EASTERN HALF OF SOUTH FRONT.

and 1 inch apart, whereas in the western half they are $2\frac{1}{2}$ inches wide and $1\frac{1}{2}$ inches apart. The ornament in the cyma reversa below the crowning member of this cornice is spaced to $3\frac{1}{2}$ -inch centres on the eastern half and 4½-inch centres on the western half.

It is usually stated that this attic story, the order of which always strikes one as being too

and is different from the detail of the later work on the western half.

The main excuse for the publication of these notes is the hope that they may draw the attention of students to the fact that details which appear to be the same at a casual inspection

fully the details on the various parts of the façades of the building to ascertain whether those which are apparently the same throughout are actually so or not. In doing this, not only will the student add considerably to the interest of his work, but he will make records of buildings which may prove

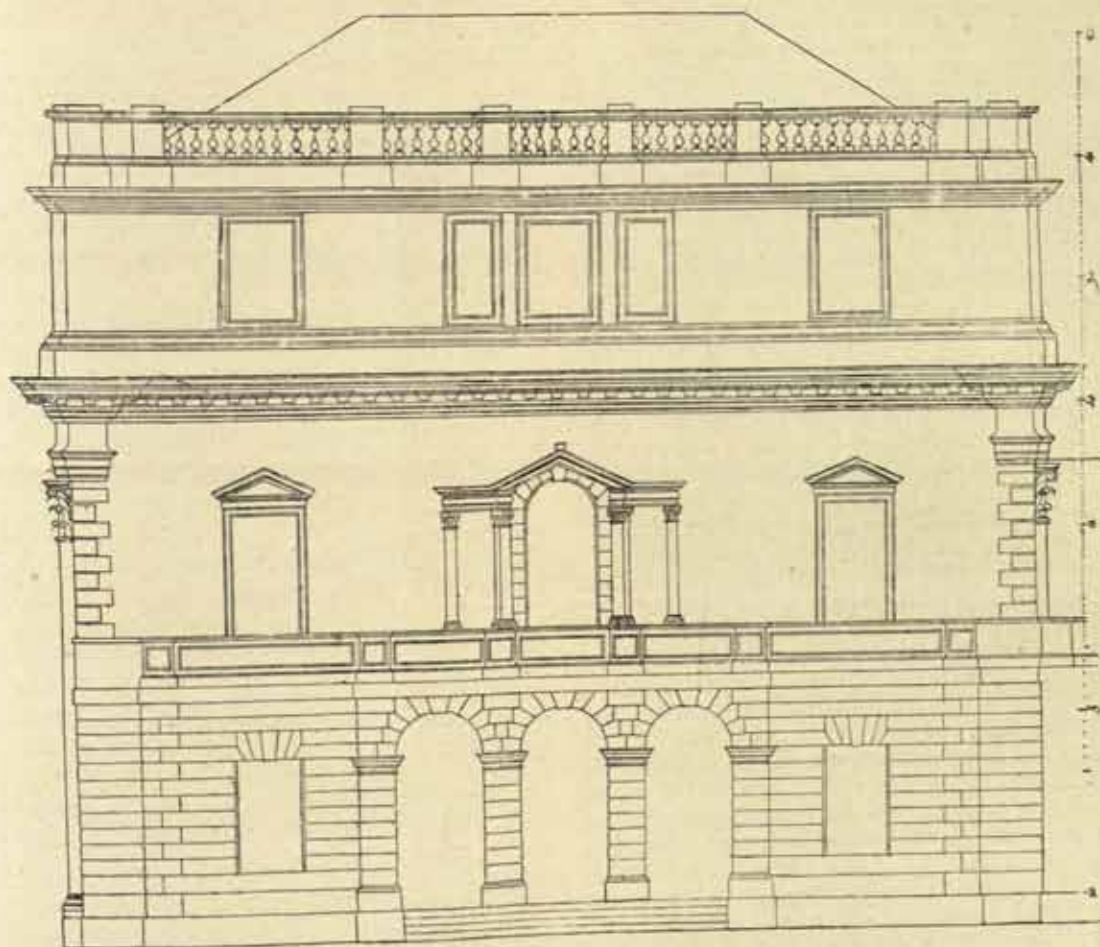


FIG. 11.—GREENWICH HOSPITAL, KING CHARLES BLOCK: SOUTH FRONT.
From Drawing in the Burlington-Devonshire Collection.

may prove to be different on a closer examination. It does not suffice, therefore, in making a measured drawing of a building, even if that building is apparently the most symmetrical and regular work of Renaissance times, merely to measure the plan, one bay of the elevation, and those details which obviously differ, but it is necessary to check care-

extremely valuable. It is also very important that the drawings be set up to scale on the spot, for measured drawings set up at home from sketches made on the spot at some previous time are often completed with the aid of an imagination which would be far better employed in the preparation of original designs.

REVIEWS.

ARCHITECTURE, THE "MATRIX OF CIVILISATION."

Architecture: An Introduction to the History and Theory of the Art of Building. By Professor W. R. Lethaby. Sm. 8s. Lond., 1912. 1s. net. "Home University Library of Modern Knowledge." [Williams & Norgate.]

Professor Lethaby describes his little book as "an introduction to the history and theory of the art of building"—which is an accurate description of the best and most illuminating essay that has been written on the subject. I suppose now almost every one knows that Professor Lethaby is a master of neat terse sayings which gather together and crystallise in form much thought, so rightly, that they strike one as inevitable. This little book has many; on the first page we have a typical one, "Architecture is the matrix of civilisation." The author says that his object in writing the book is "while outlining the larger facts of the history of architecture especially to bring out its origin and to call attention to the great contributions which from time to time have been made to its powers by divers schools"; and he adds, "a small book which does not permit of dealing with individual buildings might better suggest the onrush of perpetually changing art which while we try to grasp it has already put on another form." He rightly warns his readers against a mistake not uncommonly met with, and adds, "although it may be convenient to study the art of architecture historically, it must be remembered that archaeology is not architecture; . . . archaeology is history; architecture is the practical art of building, not only in the past, but now and in the future." "In architecture, more than anywhere, we are the slaves of names and categories, and so long as the whole field of past architectural experiment is presented to us accidentally, only under historical schedules, designing architecture is likely to be conceived as scholarship rather than as the adaptation of its accumulated powers to immediate needs." And again: "Great art is not a question of shapes and appearances which may be copied; it is fine response to noble requirements; a living architecture is always being hurled forward from change to change."

He defines architecture as building touched with emotion.

After this very important introductory chapter, the book goes on to describe the origins of architecture. "The art of building seems first to have gathered power and to have arrived at what we may call self-consciousness in the valleys of the Nile and of the Tigris . . . Possibly the art of Mesopotamia preceded that of Egypt; but by the Nile a large class of prehistoric works has been discovered which has as yet no parallel in Western Asia." "In the early days of Egypt . . . we shall best find the origins of architecture as a whole, and

origins are of great importance for framing a theory of art."

A most interesting description follows of the development of the art of building from the wooden tent pole to the column, and from the discovery of the square form for a reed-and-mud hut to the perfected temple, through accidental development to an ordered end. "Nothing of true worth has ever been invented of malice prepense."

The growth of vaulted and arched construction is traced from the domed mud-hut, through crude sun-dried brickwork, to the true wedge-shaped voussoir arch and vault of stone. Our author tells of the Egyptian ideal of proportion being, like the Greek, "based on the feeling that an object to be perfect must have all its dimensions related according to some scheme of simple measurement which avoids fractional parts."

From Egypt we are taken to the much less known country of Babylonia, and then to Crete. "Egypt, Babylonia, and Crete were the three centres of early civilisation representing Africa, Asia, Europe, which from an early period, and for long, acted upon one another. "If the origins of art in Babylonia were as fully known as those in Egypt, the story of architecture might have to begin in Asia instead of Egypt." It seems that an arch was discovered at Nippur as early as 3800 B.C., and that "Babylonia was a land of temples when Egypt was a land of tombs."

We come to a very interesting résumé of recent discoveries of temples and palaces, with much that will be new to most readers, in which the growth of dome and vault construction is traced from very early times, as well as the early development of ornament.

From the first European style of architecture in the islands of the Aegean, "the art of the heroic age with which the Homeric poems deal, . . ." the author takes us to Greece, whose art, he says, "is rather the resumption of the old tradition than a new departure." He gives us a brilliant description of the growth and development of Greek architecture (not without illuminating comment, especially on the question of proportions) in which he tells much of interest about Greek building, hitherto not sufficiently noticed by writers on Greek architecture. He points out, among other things, that the Greeks used hip-roofs, mullioned windows, spiral staircases, which they seem to have invented, marble doors turning on a "globular pivot which worked accurately in a cavity," and socketed drainpipes and traps for drainage work.

The last paragraph of this chapter is so important that I feel it must be quoted in full:—

"I have endeavoured to show how this 'incredible beauty' of Greek architecture was arrived at by continuous development from the most humble beginnings. The Greeks endeavoured to perfect a limited subject-matter and to create eternal types. This mysterious Greek architecture was but one customary way of doing buildings, after all; and recent researches have

shown that in origin the forms are barbaric and accidental—accidental, that is, in the sense that with other conditions they would have been different. There is little æsthetic mystery about the mud walls and wooden props which became a cella and peristyle, or in the overhanging eaves which became a cornice. The wonderful thing is the Greek spirit, and if we would share that we should concern ourselves with perfecting stock-brick walls, chimneys, and downpipes rather than designing pseudodipteral peristyles and Doric triglyphs—that is, as builders; as scholars, let us know all that may be known. An attempt to 'design' in architecture outside need and beyond custom is like inventing a strange alphabet which does not correspond to words and meanings. It is quite easy and quite futile. Forms are nothing in themselves; they are only envelopes of the spirit of architecture."

The story is carried on in the next chapter, with the effects of Eastern influences due to Alexander's conquests, and the "great new factor in the powers of European architecture," the use of the arch and the vault uniting architecture with engineering, and the effect of the change from the Classical idea of measured perfection to the big and strange. "It was on the wide foundations laid at this time that the mighty engineering of Rome was reared."

The theory that Roman art was derived from the Etruscans is swept away, "although they probably first adopted the Greek traditions and handed them on to the Romans." "At the time of Roman expansion, the current architecture having great demands made on it, could not throw off the old wrappings quickly enough; they were, in fact, burst by the new engineering spirit, but vestiges of the old features remained as superficial adornments."

An excellent general idea is given of Roman planning, construction, and decoration from the use of sun-dried bricks of early times. Timber-work was "highly developed in roof trusses of wide span. The principle of trussing seems to have been a Roman invention."

The art of planning was carried very far by Roman architects, "and was pursued as research into the possibilities of form and combination."

The soullessness of Roman decoration is pointed out and described as giving "a voice to matter as Greek had expressed mind"—while the Roman ideal of construction is the most perfect and generally applicable that may be imagined. "A typical Roman building was of one piece, an artificial monolith. . . . This is the method of nature, and it is an idea that modern architects would do well to consider. The great architectural question of to-day is how to build common damp-proof walls; simple solid floors; and above all, roofs better than the thin slate lids we are accustomed to. We need neither Greek nor Gothic, but an efficient method, and all our pre-occupations about 'styles' block the way, not only to high utility, but to high expression."

The next chapter takes us through early Christian and Byzantine architecture. In the fourth cen-

tury, when the persecution of Christians ended, churches were built all over the Empire. Small plans are given, illustrating three types of church, the basilican, cruciform-Byzantine, and a round church. A charming description of the "most perfect existing early-Christian church," that of the Holy Nativity at Bethlehem, 327 A.D., ends with these words: "It is the Roman alphabet in a Christian sentence, it is modern and universal."

The various changes in provincial Roman work, particularly in the Eastern and African provinces, are briefly but clearly traced, and the very strong contemporary Egyptian influence on early-Christian art which modern research has revealed is described, together with influences from Asia Minor and the East which resulted in Byzantine architecture. "The simplest mark of the Byzantine style is to be found in the substitution of the domed and vaulted church for the wood-roofed basilica." It seems there were other schools besides that of Constantinople in Syria, Asia Minor, and Egypt, which are gradually being made known to us. "In the buildings of Syria and Asia Minor, several new methods and ideas were brought into architecture. Windows with arched heads are gathered in groups, and a circular light is at times associated with them. Two round-headed lights with a circular eye just above were often used in the gable end of a church."

The idea of grouping piers and columns dates back to Justinian's time, as shown by the recently discovered church at Sergiopolis, the interesting plan of which appears here. The origin of the Gothic cusp is traced from the scallop shell in the hollowed crown of niches in late Roman work, and the beginnings of ribbed vaulting to early buildings in Asia Minor.

The author acknowledges the debt of universal architecture to the early Christian and Byzantine builders, and tells how, "in addition to evolving types of churches, they carried far the exploration of domical construction, and made wonderful balanced compositions of vaults and domes over complex plans. They formed the belfry tower from the Pharos and fortification towers. We owe to them the idea of the vaulted basilican church, which, spreading westward over Europe, made our great vaulted cathedrals possible. They entirely recast the secondary forms of architecture: the column was taught to carry an arch, the capital was reconsidered as a bearing block and became a feature of extraordinary beauty. The art of building was made free from formulas, and architecture became an adventure in building once more."

The development of Persian and Arabian art and its influence on Europe is briefly told. "Generally, the Arabian may be said to be an Eastern offshoot of Byzantine art modified by Persian, Indian, and Chinese elements." And so we are led on to Romanesque art, "the new blood in architecture," as it is described, and we reach that with

which most of us are more familiar, and about which there is less that is new to say. But the way it is said is quite new and fresh and keenly interesting. We read: "Among the contributions made to architecture in the Romanesque period, the first place must be given to the perfecting of the cathedral plan, and, indeed, of its whole constructive type. The builders of after years had only to refine it to find themselves on the verge of Gothic. The problems of vaulting were worked out to the point when it became the controlling factor in the scheme. Ribbed vaulting, a great architectural power, was either invented by the Romanesque builders or developed from some Eastern source. The disposition of towers was tried in every possible combination, and the stone spire was evolved."

A chapter is given to the Saxon and Norman schools which opens with: "The study of both Saxon and Norman periods of Romanesque art in England has been neglected. If we had a comprehensive and fully illustrated account of our early art, it would seem that it is for us of extraordinary interest and had much of great beauty," and is followed by a description of the work of these schools which shows very considerable knowledge of what is left. It is necessarily brief, but it may possibly stir up some one to take up this matter. An unknown field of research in the architecture of our own country is very suggestive.

If the chapter on Romanesque art is interesting, that on "Gothic building in France—The Architecture of Energy" is an inspiring poem. Nothing better has been written about it. Short as it is, it tells as well as can be told what the essence of Gothic art is. There is no high-faluting; just a short, commonsensible analysis and description, but one that stirs to the very depths. As one reads the unsurpassed glories of French mediæval art glow again with fresh life and intensity. It is impossible to quote from it, one could only quote the whole chapter, which rises above the high level of the rest of the book.

No one loves and admires our English Gothic architecture more than I do, but I feel Professor Lethaby is right in not claiming that it even aimed as high, much less attained to the standard of the French. It certainly comes next, and is only surpassed by the very best examples of our neighbours' work. "The ruling temper of English Gothic at its high time is a spirit of sweetness which contrasts with the soaring grandeur of the French cathedrals. The theory of stonework construction at maximum stress was never perfectly grasped." He defends so ably the use of the old names, Early-English, Decorated, Perpendicular, which have been much criticised, that I think many of us who have partly dropped them will revert to them again—they are closely associated with very delightful early enthusiasms. I wonder whether he has done full justice to English perpendicular work, which is peculiarly our own; I feel it should

have been added to the "special contributions which were made by the English school to the traditions of mediæval Gothic art."

The chapter on the Renaissance is a valuable one. The author tells of its almost inevitable birth in Italy, and says, "Perhaps if it had taken some different turning it might have been more obviously beneficial; as it was, there was not only eagerness to learn and to bring back forgotten powers to architecture, but there was eagerness as well to forget what the intervening time had gained. In looking back, art loses its life." He points out that the Renaissance has led to noble expression in individual arts where there was a second inspiration as well as that of antiquity, and how in all, "direct reference to nature comes in at the source. Such refreshment was excluded from the purview of the sanctioned architecture in the grand style"; and he truly adds, "It must, I think, be admitted by those who have in part understood the great primary styles, Greek or Gothic, that the Renaissance is a style of boredom. However beautiful single works may be, it tends to be blind, puffy, and big-wiggy." He points out how the very rules of the game make it to a certain extent unplayable since they apply to columnar temples, and not to buildings with enclosing walls, windows, floors, staircases, and roofs.

In the final chapter the modern position is reviewed. He points out how when the driving force of the Renaissance weakened, the various revivals began, Greek, Gothic, and then a revival of a revival, all of which have led to failure and disappointment. He then shortly examines what he calls "the two æsthetic superstitions" about beauty in architecture which stand in the way of our attaining it—the idea of a more or less definite rule of proportion, and of an abstract beauty, and he points out the mistake of both.

He suggests that when the series of Renaissance styles reach their end, we may expect that on the then existing basis, whether it may be sham Greek or sham Gothic, a movement will be imperceptibly entered on, which will transform the chaos into another order. Are we not already doing this? I seem to see signs of it in the best modern work, but possibly one is too near to judge.

Every word of this chapter should be read and digested; it is the result of much thought, and full of ideas. Many will, I am sure, at first rebel against the author's advice; it will be said that it leaves no room for the artist. I certainly differ from him in thinking that hardness can be anything than a serious demerit under any circumstances, it is one of the bad faults of much modern work. But bearing in mind what he has said about art and beauty in the earlier part of the book, particularly in the spirit of Greek and Gothic art, and applying this to ourselves and the future as well as we can, I think his advice is sound, and that probably upon

some such lines as he suggests, the future of the art of architecture must be built, if it is to have a future.

CHARLES SPOONER [F.].

OUR CATHEDRAL CHURCHES.

English and Welsh Cathedrals. By Thomas Dinham Atkinson. With 20 illustrations in colour by Walter Dexter, R.B.A., 20 in monochrome, and 48 plans. 80. Lond. 1912. 10s. 6d. net. (Methuen & Co., 36 Essex Street, Strand.)

It is unusual in these days to find a fresh architectural book which savours neither of Ruskin nor of Baedeker; such, however, is Mr. Atkinson's *English and Welsh Cathedrals*. The book describes thirty-seven churches in 350 pages, and, of course, only pretends to put the leading facts of their history in a concise and handy form, and this it does most admirably.

There is a short well-written introductory chapter, in which a good deal of stress is laid upon the differences between the secular and the regular churches, and the cathedrals are described in four groups, "the Canons' Churches, the Monks' Churches, the Foundations of Henry VIII., and the New Sees." This is not absolutely logical, since for architectural purposes the Augustinian Canons were practically monks and yet their church at Carlisle is described among the "Canon's Churches" and those at Oxford and Bristol among the "foundations of Henry VIII." On the other hand, the Benedictine Churches of Gloucester, Chester, and Peterborough are classified as foundations of Henry VIII., while that of St. Albans, as well as the Augustinian Church of Southwark and the "Canons' Churches" of Manchester, Ripon, and Southwell are described as the Cathedrals of "New Sees."

There seem to be remarkably few slips in the book, but the presbytery vault at St. Albans must be earlier than the date assigned to it (1420) since the original paintings can be traced underneath the eagles and lambs with which Abbot Wheathampstead caused it to be redecorated. Again, though we are told part of the story of the central tower at Wells, we are not by any means told the whole of it, but then one does not expect to find unlimited information in a book of this size.

The author is to be commended for his discretion in dealing with the modern alterations and restorations of our cathedrals. What he does say about these is sound and temperate; on the one hand he makes no wild statements to the effect that the buildings have ceased to be ancient monuments, that they have lost all beauty and interest in the process they have undergone and so forth; on the other hand he does not "drop into poetry" or tell us in reverberating language that amongst the many *admiranda* of their elegant interiors are the *instrumenta* produced in the *ateliers* of Messrs. Pope and Chappell. It is refreshing, however,

to observe that his righteous wrath is kindled when he tells his readers of the deplorable fate of St. Albans.

The illustrations are hardly up to the mark. The plans are clearly drawn but would have been more instructive if they had all been reproduced to the same scale. Of the water-colour drawings those of York and Wells are good, but it has not been the privilege of many people to have seen Lincoln Minster with a rose-pink Chapter-house and lavender-coloured roofs.

CHARLES A. NICHOLSON [F.].

FIREPLACES.

The English Fireplace: A History of the Development of the Chimney, Chimney-piece, and Firegrate, with their Accessories, from the Earliest Times to the Beginning of the Nineteenth Century. By L. A. Shuffrey. Illustrated by 130 collotype plates from photographs chiefly by W. Galworthy Davie, and many other illustrations. Sm. 40. Lond. 1912. 21s. net. [B. T. Batsford.]

Despite the large output in recent years of works on architecture, and on particular features of buildings, the fireplace has had to wait for adequate illustration till the issue of Mr. Shuffrey's handsome volume. And yet the subject is a very important one, since the hearth is still metaphorically, as it once was literally, the centre and focus of the home.

It is uncertain in what age man first learnt to kindle a fire in order to cook his meat or warm his body, but he must very soon have found some sort of screen necessary to protect it from the wind, and from this to a roof is but a short step; hence the circular form of all primitive huts. This form still survives in the wigwam of the North American Indian and the igloo of the Eskimo—the latter warmed by a blubber lamp. Another interesting survival of the primitive hearth and reredos is given by the author (fig. 10) from the Shetland Islands, where they seem to be still in use.

The Middle Ages saw the evolution of the fireplace from this primitive open hearth to the recessed form, differing only in detail from that of to-day; and this section of the book is certainly the best part of it and could hardly be improved upon, the illustrations being particularly good and apposite. In the course of it the author makes the interesting suggestion that the shelves or corbels often found on either side of the lintels of hooded fireplaces were intended to counteract the thrust of the straight arches—an explanation more in accordance with general principle of Mediaeval architecture, that changes of form were always made for practical reasons, than the generally accepted one that these shelves were intended to hold lights, for which purpose they are ill-adapted. He seems, however, rather to have lost sight of this principle in his account of the change from hooded to recessed fireplaces, the fact being that it is impossible to construct a purely hooded fireplace which will not smoke dismally. This smoke diffi-

culty—at first little regarded by our ancestors, who, indeed, professed to regard wood smoke as a prophylactic—must yet, on the introduction of glass windows and other devices for keeping out the cold, have been a very real nuisance; hence the gradual setting back of the hearth into the wall till the hood became superfluous.

The sections devoted to Renaissance and Latin work are not quite so good; the former, in particular, seems rather overweighted by the number of illustrations—many of them almost duplicates—and some incoherence in their arrangement. They are, however, so good in themselves that it were ungracious to complain of this liberality.

We have ever as a nation been peculiarly open to foreign influence in art, and were particularly so in the sixteenth and seventeenth centuries, and it would be an interesting exercise for the student to try and trace this influence in the examples here given. Some were probably imported ready made—as, for instance, the lower part of that at Plas Maur (fig. 93), and probably those from Old Charlton (Plates XV. and LXIII.)—from the Low Countries.

At Bucklebury is a typical François I. example (fig. 95), and French also is that at Upper Swell (Plate XXVI.). The Bolsover Castle mantel (Plate XXVII.) is Italian, and probably also that in the dining-room at Old Charlton (Plate LXXVIII.). Many of the fine eighteenth-century marble mantels to be found in this country were made to order in Italy, just as many of the contemporary mural monuments in our churches were.

French Louis XV. mantels were also imported, but they were generally modified in proportion to suit our higher and narrower fireplaces.

Among the things which might be more adequately treated if a second edition were called for is the evolution of the coal-fire grate, of which little is said in the present volume. Owing to the fact that till the end of the seventeenth century wood was still used as fuel by the wealthy, except in the North, there are very few good examples before that date, the Holyrood ones being, perhaps, the sole exceptions. The example at Weald Hall (fig. 150), called Jacobean, is a typical eighteenth-century basket with earlier dogs, and the two baskets at Penshurst (Plates LXVIII. and LXIX.) are not earlier than 1700. A fine Queen Anne grate is to be found at Blenheim, and from that time an unbroken sequence can be traced down to the nineteenth century.

It is said that this book is the outcome of ten years' work, and it is difficult to realise the amount of patient research which must have gone to the making of it. Mr. Shuffrey and his coadjutor have not (except in very rare instances) been content with second-hand examples, and the amount of ground covered by them from the Shetlands to South Cornwall must have been enormous.

C. E. SAYER [A.].

A BUILDING TEXT-BOOK.

Building Construction (Advanced Course). Seventh Edition. By Charles F. Mitchell. 8s. Lond. 1912. 6s. net. [B. T. Batsford, 94 High Holborn.]

Mr. Mitchell's book on Building Construction is already well known to the profession, and its popularity and usefulness is proved by the fact that a seventh edition has been required.

A comparison of the new edition with the fifth edition shows that much of the work has been rewritten, and a considerable amount of new information is included. The chapters on columns and stanchions and girders have been considerably enlarged, while the chapter on reinforced concrete is practically new, and brings the work right up to date.

It is a matter for regret that some of the information which the volume contains is given in such a form that the average architect will not be able to make much practical use of it. The tables giving the chemical analyses of various building materials are no doubt useful and instructive to the chemist, for he will recognise the *properties* which the chemical constituents imply. The architect, however, has usually only a limited knowledge of chemistry, and he has neither the time nor the means at his disposal for making a chemical analysis or testing samples of materials which he proposes to use. Undigested facts such as these should be excluded and in their place a great deal of information might be given in such a form that it could be applied to practice by those for whom the book is ostensibly written.

The supervision of builders' work is one of the most responsible functions which the architect is called upon to perform; yet where can he find a text-book that deals with the thousand and one *defects* to which builders' work and materials are liable, setting forth the symptoms that should put the architect on his inquiry, and indicating the causes and the remedies and precautions he should adopt to prevent or cure them? Where would the medical student be if the only available books were treatises on anatomy, while works on the symptoms, treatment, and cure of disease were non-existent? A chapter on "Defects in building, their cause and cure" would be invaluable.

There should also be a chapter devoted to "Tricks of the trade," or "How not to build"; pointing out those all too common substitutions of inferior materials and workmanship which the unscrupulous will sometimes attempt to pass off for what is usually specified and which are so liable to go undetected by the inexperienced. The student should be instructed in "what to look for" when he is called upon to supervise builders' work, instead of being left to glean this invaluable knowledge by sad personal experience. It is suggested that this point of view might be given more consideration in future editions.

It is evident that the author and publisher have spared no time or trouble in their task, and the book is one which is worthy of a place on the book-shelf of every architect.—A. R. CONDER [A.]

SUFFOLK CHURCHES.

The County Churches of Suffolk. By T. H. Bryant. 80. Lond. 1912. 2 vols. Price 5s., or 3s. each separately. (George Allen & Co., 44-45 Rathbone Place, W.)

The series of volumes upon the County Churches of England now being published by Messrs. Allen & Co. should appeal to a large field of readers, for up to the present time the only available sources of information have been the large Kelly directories, which are cumbrous and beyond the reach of most students, or the various county guides, in which, too often, the most interesting churches are left unmentioned, if outside the itinerary of the author.

The publishers have already issued volumes dealing with the churches of Notts, Surrey, Cambridgeshire and Norfolk, containing short, clear, and concise accounts of the fabrics and their more interesting fittings and adornments, rood and parclose screens, stalls, pulpits, wall-paintings, old stained glass and brasses, and the excellent standard attained in these volumes has been well maintained by Mr. T. H. Bryant in the two volumes that he has compiled upon the Suffolk churches, which give a description of every ancient church in that county, no small undertaking when we find that there are no less than 533 to deal with.

The work is in two volumes, Western and Eastern divisions respectively, and the churches are described alphabetically in the twenty-nine Deanery divisions, prefaced by a well written introductory chapter which lucidly deals with the ecclesiastical history of the county. Mr. Bryant notes that Suffolk was not Christianised until A.D. 630, when the Burgundian priest Felix settled in the county; but so great was the success of his mission and the enthusiasm of the people that before A.D. 1100 no fewer than 398 churches existed, representing roughly a church for every fifty inhabitants, and at that time Suffolk surpassed all the other counties in this respect.

The actual fabrics erected by such an enthusiastic people are well worth careful study, and it is to be doubted if any other district can vie in its church work with East Anglia. Especially is this the case in the fifteenth and the first quarter of the sixteenth century, when the rapid increase of the population, due to immigration from the Low Countries and elsewhere, and the prosperous cloth weaving industry, led to founding new and rebuilding many existing churches upon a magnificent scale. This is well exemplified in the churches of St. James and St. Mary at Bury St. Edmunds, the latter over 200 feet long; the churches at Long Melford, Lavenham, and many others noted by Mr. Bryant, too numerous to mention here. The western tower of Lavenham Church is a notable example of

the great size attained in some of this later work. It is probably the largest in plan in England, at the summit being roughly thirty-six feet square, spreading out with its beautiful angle buttresses at the base to 57 feet on plan, and although never finished its height is 140 feet.

Mr. Bryant writes instructively upon the materials used. The earlier churches are mainly constructed with rubble walling, flints or beach pebbles being used for this purpose with Roman bricks or tiles worked in. Building stone there was none, all had to be brought in, some from Caen, other from Barnack or elsewhere, in any case by a long and in those days risky passage by sea, so that stone was used lovingly and the utmost detail wrought out of it. At the beginning of the fifteenth century the practice of facing the churches with dressed or squared flints came into vogue, arranged in panels formed with stone dressings, and this method when well done was practically everlasting. Much of this work is most admirable in its design and execution, for instance, the clerestories of Coddanham, Saxmundham, and Earl Stonham Churches, and the porches at Halesworth, Mendlesham, Blythford and Southwold. The smaller village churches were probably thatched with reeds, and this form of roofing still survives in about twenty churches.

The later and more important buildings have leaded roofs, and, when the naves are clerestoried, often with parapets above, but it may be questioned whether this is artistically better in effect than the simple, boldly-projecting overhang of the leaden eaves, which give a deep band of shadow, more effective than the somewhat monotonous range of battlement and pinnacle, as seen at Blythburgh and Southwold. Structurally, when the wood framing of roofs is of the hammer-beam type, the parapet is a mistake and more rarely used.

The detailed descriptions of each church as given by Mr. Bryant are very much to the point, and as far as our observation extends are mainly correct. We note, however, that the west tower of Long Melford is stated to have been built in 1711, but this Georgian tower was replaced some years ago by the modern Gothic tower, which is shown in one of the photographic illustrations.

The author has done well to adhere to the old terms, Norman, Early English, Decorated and Perpendicular, in noting the buildings and details.

It would have been instructive if a few typical ground plans, indicating the progression from the simple early unaisled churches to the splendid planning of the later churches, could have been included, and a map of the Deanery divisions, and a note of the nearest railway station to each church, would have added to the utility of the book. These, however, are very minor defects, and the student has every reason to be thankful to Mr. Bryant for the care and research which he has devoted to these very handy volumes.

W. G. HORSEMAN, *Licentiate.*



9 CONDUIT STREET, LONDON, W., 8th February 1913.

CHRONICLE.

The Prizes and Studentships 1912-13.

The Annual Exhibition of Designs and Drawings submitted for the Institute Prizes and Studentships was held at the R.I.B.A. Galleries, 9 Conduit Street, and was open to the public from Tuesday 21st January, to Monday 3rd February. The number of competitors was 92, which, as the following table shows, is considerably above the average for the preceding ten years:—

Year	1903	'04	'05	'06	'07	'08	'09	'10	'11	'12
Competitors	79	69	73	80	87	61	71	70	64	61

The Exhibition was visited by over 1,400 persons.

The meeting last Monday for the Annual Addresses to Students and the Presentation of Prizes was very largely attended, the special guests of the Council including Sir Lewis Selby-Bigge, K.C.B., Permanent Secretary of the Board of Education, Sir W. Goscombe John, R.A. [*Hon. A.*], Sir George Frampton, R.A. [*Hon. A.*], Mr. Frank Dicksee, R.A. [*Hon. A.*], Sir Henry A. Miers, F.R.S., Principal of the University of London, Professor E. S. Prior, F.S.A. [*F.*], Mr. Goodhue, of the firm of Cram, Goodhue & Ferguson (Boston, Mass.), and Mr. Evelyn Shaw, of the British School at Rome. Past Presidents were represented by Sir Aston Webb, C.B., C.V.O., R.A., and Mr. Leonard Stokes.

The preliminary business of the meeting included an announcement by Mr. Guy Dawber that the Council had nominated Mr. Reginald Blomfield, A.R.A., for this year's Royal Gold Medal, the nomination being based on his executed works as an architect and his distinguished contributions to the literature of architecture. The enthusiastic applause which greeted the announcement left no doubt as to the popularity of the Council's selection.

Mr. Curtis Green's Review of the Students' Work was illustrated by lantern slides prepared from the drawings themselves, some forty or more strainers being shown in this way. The innovation—for this is the first time the experiment has been tried—added much to the interest and enjoyment of the proceedings; the audience were able to follow the critic's points with intelligence, and to the students themselves the value of the criticism was enormously enhanced.

State-Aided Art Training.

The *Times* of the 4th inst. publishes in its Educational Supplement a letter from the President, Mr. Reginald Blomfield, A.R.A., correcting one or two misconceptions which he thinks may arise from a recently published letter of Mr. Alan Cole in regard to State-aided art training in England:—

Mr. Cole suggests (says Mr. Blomfield) that the aim of reformers is to induce the Government to enter "the domains of our architects, our builders, our upholsterers, our glass and pottery manufacturers, dictating standards of taste and achievement to them and organising and protecting factories for such things."

Mr. Cole must surely know that the aim of those who are seriously concerned about the condition of State-aided training in England is nothing of the sort. What artists object to in our present methods of training is that so much of it is make-believe. What they want to do is to stop playing with the crafts and get to the real thing, and what they contend for in State-aided training in the industrial arts is not that workshops should be established *ad hoc*, but that all these crafts should be taught in connection with existing factories and workshops, and should not be taught as a mere matter of design on paper. This is a totally different position from that put into our mouths by Mr. Cole.

Mr. Cole's history is not quite accurate as to Francis I., Henry II., and Catherine de Medicis, and the example that I gave from Colbert's reorganisation of the art of France was only intended to show that that great statesman fully realised that training in design and in process must go hand-in-hand and that the divorce of the training school (even if they be "fine, well-built, well-equipped institutions for art training," as Mr. Cole puts it, and quite unrelated as I put it) from the workshop and the factory can only lead to disaster in industrial art. Great play has been made with certain alleged errors in the statistics used by the Departmental Committee on the Royal College. Even if those figures were erroneous, the case for reform and development would not be materially affected, for the ominous facts remain that there are a great many more artists about than can find employment, that the attempt to bring the manufacturer and State-trained designer into touch has in the main failed, and that the average of work sent up year by year from the art schools to the National Competition is lamentably low. Arguments based on the very attractive little exhibitions annually given of selected works from the National Competition are beside the point, because they show only the best and not the interminable waste of inadequate work which lies below. That this should be the result of all the effort and all the expenditure of the State is not the fault of the art masters, still less of the Board of Education, but the fault of an ill-considered system never thoroughly thought out or organised on any clear logical basis; and what is aimed at is not the total upheaval of the present system, but its intelligent reorganisation and development on practical lines. I would remind Mr. Cole, who is a little unkind to the Standing Committee at Whitehall, that artists do, after all, know their own business of the arts, and that if they do not, certainly nobody else does.

As to the Royal College of Art, with the exception of his comparison with the *Ecole des Beaux Arts*, to which it bears little or no resemblance, I accept all that Mr. Cole says as to its great opportunities. My only criticism is that such scanty justice is done to those opportunities, and that, again, through no fault of its able and devoted staff; in spite of its unrivalled advantages of position and resource, the work of the Royal

College is in the main limited to the manufacture of art masters, instead of being, as it should be, a great national centre of training for all the most promising young artists of the country.

The Danger to St. Paul's: Wren's Problem and Method.

Mr. Macartney's Paper under the above heading in *The Times* of the 1st February forms so lucid and comprehensive a summary of the history of the fabric of St. Paul's, and of the dangers which threaten the structure, that it is thought worth while to reprint it here. It will serve as a useful appendix to Mr. Macartney's Paper, "The Present Condition of St. Paul's Cathedral," read before the Institute in November 1907 [*JOURNAL*, 23rd Nov. 1907].

Wren, in a memorial which he presented to the Bishop of Rochester, relating to the restoration of Westminster Abbey in 1713, gave in a few words what I cannot but think represents his considered and mature opinion on the subject of architecture. He writes: "It is by due consideration of the static principles, and the right poising of the weights of the buttments to the arches, that good architecture depends: and the buttments ought to have equal gravity on both sides." He was by this time eighty-one years old, and had been practising as an architect for over fifty years. St. Paul's was then nearly completed and he had seen all his work actually finished, so that the words quoted above may be taken as his last word on the subject. One cannot help wondering whether he did not feel considerable doubts about the foundations of St. Paul's, knowing as he did that he had imposed a greater weight on the soil upon which he built than had the builders of the Abbey upon the soil on which they had raised their structure.

Of architectural training, as we understand it at the present day, Wren appears to have had none; nor, indeed, except for a short visit to Paris in 1665, did he have the advantage of foreign travel like Inigo Jones, his predecessor. During his stay in Paris, however, he was very industrious, every day visiting the Louvre, which was then in course of erection. Wren was precocious as a youth, but his bent was not towards art. Mathematics engrossed his attention, and afterwards astronomy, and physical experiments always seem to have had a strange fascination for him. He was a brilliant academic success, being Professor of Astronomy at Gresham College, London, a post which he resigned on becoming Savilian Professor of Astronomy at Oxford. However little he knew of architecture, his knowledge of statics would no doubt make up for some deficiency in the field of construction. His early commissions to carry out works in architecture, such as Pembroke College Chapel, Cambridge, and the Sheldonian Theatre at Oxford, were most likely obtained through family influence, his father being Dean of Windsor, and his uncle Bishop of Ely. Possibly the sufferings of these loyal Churchmen during the Commonwealth and the influence of his devoted friend, Evelyn, prevailed on Charles II. to create a special post for him—that of assistant to the Surveyor-General. In this new capacity he was called upon at once to give his advice about the repairing of old St. Paul's. Very little work, however, was done before the fabric was rendered much more ruinous by the Great Fire of 1666. It is clear that his practical sense told him that the patching up of the old cathedral

would be a waste of money. When at last it was decided to rebuild St. Paul's, an opportunity was afforded him of accomplishing his long-cherished desire to build a dome. He evidently had some difficulty with regard to this feature; for he says, "Among all the compositures of the ancients, we find no cupolas raised above the necessary loading of the hemisphere," as in the case of the Pantheon and "Sancta Sophia"; but in deference to the general taste of the time, which had been accustomed to nothing but steeples, he concluded that it should be raised to a remarkable altitude. This may explain the extraordinary erection he proposed to add height to the depressed dome of the "warrant" design.

For St. Paul's Wren set himself to devise a dome of an unusual type, poising and counter-poising his weights and thrusts till he achieved one of the greatest marvels of building construction.

THE DOME AND FOUNDATIONS.

There are three cardinal points which have to be considered in relation to the dome—construction, the materials employed, and the soil beneath the fabric. As regards the first, the entire weight of the dome rests on eight piers, which, vast as they look, are in reality much smaller in proportion than those of St. Peter's at Rome. Thirty-two thousand tons are supported by eight piers. This means that each square foot is subjected to a pressure of thirteen tons at the level of the springing of the arches, a load somewhat beyond that considered safe in the practice of modern engineering; but, if we come lower to where the piers rest on the potters' earth, we find that owing to the spread of the foundations, each foot of the soil is subjected to a pressure of 5.68 tons per foot, still encroaching upon the margin of safety recognised by engineers to-day. Wren was, however, consistent with regard to his scientific conception of building; he writes: "If the Buttment be more than enough, 'tis an idle expense of Materials; if too little it (the Arch) will fall." True to his convictions, he cut down his materials as far as he dared, in order to avoid superfluity. Had he spread the footings in the foundations of the dome in conformity with modern ideas, those subsequently in charge of the safety of the cathedral would have been saved much anxiety.

The second point is the material employed. Wren had a truly British contempt for foreign articles, especially stone and timber. After examining the enormous mass of *débris* which covered the whole churchyard, he found that the Portland stone used by Inigo Jones had suffered more from the fire than the Caen stone which, he said, was "more beautiful than durable." The Kentish rag-stone he sold to pave the London streets. Portland stone does not seem to have been employed to any great extent before Inigo Jones built the West Portico of St. Paul's; and with this he also refaced both the inside and the outside of the Nave and the two transepts. Portland stone and Roche Abbey stone from Yorkshire were the favourites of Wren. A stone of a somewhat similar character to the latter—namely, Bolsover Moor—was selected by the Commissioners for the new Houses of Parliament, but it was not used.

Economy had to be studied; and, although 43,000 tons of rubbish were carted away from the site of St. Paul's, some of which was used in the rebuilding of the City churches, much was worked into the structure of St. Paul's in places not exposed to the weather. It is evident that Wren had great trouble in providing an adequate supply of stone, owing to the difficulty of carriage. He was compelled to use only sea-borne

stone from Portland, and Beer, in Devonshire, the transport of which in those days was dependent on fair winds to ensure speedy arrival at Paul's Wharf and Redriffe (Ratcliff). To make up for deficiencies due to delays Wren was forced to use Barford, now generally known as Taynton stone, and more of the Caen stone from old St. Paul's than would otherwise have been the case. Unfortunately some of the latter has got into the construction of the drum of the dome, where it can be identified by the Norman chiselling. Unable to stand the pressure, it has been crushed. Wren optimistically thought that if this stone, which he considered "more beautiful than durable," was not exposed to the air and to the deleterious effect of sea-coal smoke, it would not deteriorate; but the London atmosphere is insidious, and has reached and attacked the most hidden recesses of the cathedral with its corrosive influence.

When the augmentation of the height of the building was decided upon, increasing constructional difficulties, owing to added weight, presented themselves; and although Wren believed that the same ground, which had supported the old cathedral with its lofty tower and spire, measuring together 530 feet, would carry the new, experience tells us that he overrated the supporting power of the soil. We have Wren's own statement, as well as that of his son, and also the evidence given by the trial pits sunk in recent years, that the foundations of the cathedral rest on potters' earth from 4 feet to 6 feet deep. On this he rested his footings, with the exception of those at the east end, where he came on ground which, as he shrewdly points out, had been robbed of the potters' earth from very early times, and, moreover, met with the foundations of monastic houses and nine wells. We find that at this point he went down some 18 feet to 25 feet with a great spread of footings, two or three times greater than had been employed in the other parts of the cathedral, which very clearly shows that he mistrusted the supporting power of the soil on the eastern side of the building.

The dome settled before the side walls of the cathedral were finished, as we can see from the distortion of the windows, the inclination of horizontal mouldings, and the diminishing courses of masonry used by Wren to bring the level of the parapet true. Moreover, it is stated in the *Memoirs of the Strongs* that Edward Strong was employed to make good blemishes in the piers and arches which were caused by the unequal settlement, due to differences in the supporting power of the soils. Forty tons of Portland stone, it is stated, were employed to repair the south-eastern pier during the construction of the building.

THE PRESENT DANGERS.

If Wren had been able, as he desired, to make use only of Portland stone, there would be less reason to-day to fear for the safety of St. Paul's. It must be obvious from the enormous weight that the soil upon which the cathedral is based is liable to very considerable alteration from any subterranean disturbance; and against this it is most necessary to guard. It is probable that the subsoil is fed by currents of water which might easily be diverted by the construction of large underground workings, and which may already be affected by the expansion of pavement and improved drainage in the City. The weakness due to the employment of Caen stone may, it is hoped, be overcome; but nothing can prevent the thin layer of pot earth from cracking or settling if a scour from the underlying sand is brought about. Doubtless the slight movements that have taken place, the falling out-

wards (to the south) of the western tower and the south transept, are mainly due to the excavations made for the deep basements of the houses on that side. If the foundations of the cathedral had a greater spread every portion of the building would be safer; but Wren, eminent man of science as he was, did not foresee the burrowing propensities of future generations, and made no provision to safeguard his masterpiece from the attacks of human moles.

Sir Francis Fox in his able report has drawn attention, though with less detail, to the facts here set out. He has also pointed out the possible danger due to removal of enormous quantities of earth necessary in the construction of the proposed subway, if the promoters thereof succeed in getting their Bill through Parliament, and using the full powers therein contained. The excavations will remove from 25,000 to 30,000 cubic yards of earth, an amount, roughly, equal to the tonnage of a first-class modern liner; and this removal cannot but tend to destroy the equilibrium upon which stability depends.

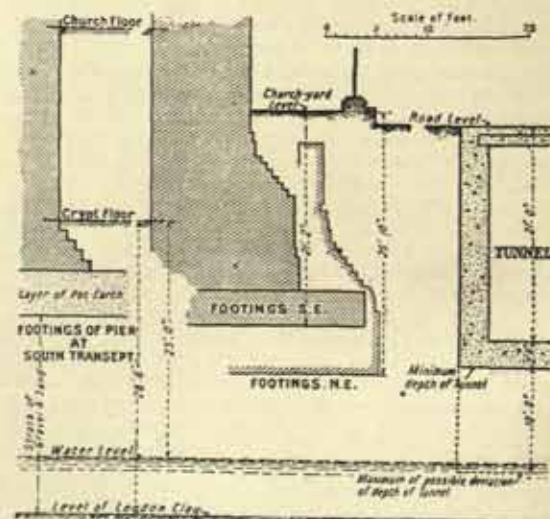


DIAGRAM SHOWING THE FOOTINGS OF THE PIERS OF THE DOME AND THOSE OF THE EAST END, THE DEPTH AT WHICH THE TRAMWAY MIGHT BE CONSTRUCTED, AND THE WATER-BEARING STRATA ABOVE THE LONDON CLAY.

The report emphasises another danger that may assail the structure, in addition to that which menaces the delicately-poised dome with its great weight bearing on foundations which in all probability will subside—namely, vibration. The effect of vibration on a large building has not yet been made a subject of searching inquiry; but doubtless it has an evil effect, which will increase in violence with the number and size of the vehicles causing it.

If the projected excavations were carried out, then to take the foundations down to the level of the London clay would seem to be the only possible method of averting disaster; and this in itself would be an extremely hazardous and expensive process.

Work such as grouting with fine liquid cement under pressure is being carried out, and will strengthen the building; but there are inherent weaknesses in it which can never be remedied. The motto, "*Quieta non movere*," should be writ large over the area of St. Paul's churchyard.

The Admiralty Arch Approach.

In the House of Commons on the 30th January:

Mr. Bird, on behalf of Sir W. Bull, asked Mr. Benn, as representing the First Commissioner of Works, if he would state why the Government had been advised to sell the vacant land at the entrance to the Mall, in Cockspur Street, having regard to the fact that permanent buildings would be placed thereon and therefore preclude all chance of the Admiralty Arch having an approach to Trafalgar Square adequate to its position; and whether that meant that all idea of acquiring part of Drummond's Bank and the opposite corner had now been abandoned.

Mr. W. Benn: The land referred to belongs to the London County Council. I am informed that they have sold it, thereby precluding, as the hon. member rightly says, all chance of the construction of a worthy approach to the Admiralty Arch.

Sir Aston Webb, R.A., in a letter to *The Times* of the 4th inst., says:—

I think it should be known that in the summer of 1911, Mr. George Drummond, being anxious to see a worthy completion of the scheme, called upon me and made a most generous offer to submit to an alteration to the end of Messrs. Drummond's Bank, and give up the land thus liberated free of cost, if the County Council would make the alteration and set back the buildings on the other side of the roadway. This offer, I understand, was declined by a Committee of the Council, and thus what was apparently a great opportunity was lost.

The New Delhi: Appointment of Government Architects.

The Government of India have decided to entrust the preparation of designs for Government House and another important building in the new Imperial capital at Delhi to Mr. E. L. Lutyens [F.] and Mr. Herbert Baker [F.], who are to be associated for the purpose on equal terms. It is also contemplated that Messrs. Lutyens and Baker should assist the Indian Government in the selection of designs for other public buildings at Delhi and act generally as its principal architectural advisers as regards the new capital. To ensure that the designs are adapted to climatic conditions, Indian sentiment, and official requirements, and to furnish advice as to Indian materials and the employment where possible of Indian craftsmen, it is proposed to give Messrs. Lutyens and Baker the assistance of Colonel Sir S. Swinton Jacob, K.C.I.E. [Hon. A.], who has recently retired from active work as engineer and architect to several important Native States of Rajputana. *The Times*, in a leading article on the 29th January, says:—

The appointments announced should give satisfaction everywhere. . . . Mr. Lutyens and Mr. Baker are, in our opinion, admirably qualified for this magnificent task. They both have genius, they both have their best years still before them, and they were trained in the same school. Mr. Baker's ideas for the new capital [briefly summarised in the *JOURNAL* for 19th October last] are known to represent Mr. Lutyens' own view. The usual difficulties of collaboration are therefore not likely to arise in this particular case. The association with them of Sir Swinton Jacob as adviser on Indian

conditions, materials, and crafts is also an excellent arrangement. Sir Swinton Jacob is the architect of many beautiful buildings in Rajputana in the Indo-Saracenic style, and he will bring to the service of his two principals a lifelong knowledge of Indian methods and skill. Mr. Lutyens and Mr. Baker are certain to desire to make the utmost of Indian models in working out their ideas, though those ideas will not, we are sure, be hampered by any servile regard for previous styles in India or elsewhere. Their duty is to build a capital truly representative of British rule; and that ideal cannot be attained either by transplanting wholesale a bygone European style or by slavishly reproducing an Indian one. It is significant that Mr. Baker has already created buildings of great beauty and character in South Africa, which are admirably suited to the light and climate, and which, while possessing always an individuality of their own, have absorbed in them many of the distinctive features of the Dutch architecture of his predecessors. That is the spirit in which, as we believe, both he and Mr. Lutyens will address themselves to this new opportunity—as great an opportunity as any architects have ever had. They cannot build new Delhi alone, but they can form the main ideas and set the key to which, we doubt not, much other talent will readily respond.

It is of interest to note that Mr. Baker and Mr. Lutyens as young men were together for a time in the office of Sir Ernest George (then Messrs. Ernest George and Peto)—Mr. Baker as assistant from 1886 to 1890, and Mr. Lutyens as improver in 1887 and 1888. Mr. Baker, who served his articles in the office of the late Arthur Baker [F.], of Kensington, was awarded the Ashpitel Prize in 1890, and started practice the following year in Cape Town.

In the House of Commons on the 30th January:

Mr. King, calling attention to the appointment, said that four distinct pledges had been broken: the report of the Town Planning Committee should be published; there should be some sort of competition in connection with the appointment of architects; the Consulting Architect to the Government of India should be asked for his advice, and the question of style should not be settled until after the report of the Town Planning Committee had been presented to the House.

Captain Murray urged that the plans should provide for a separate Council Chamber for the Imperial Legislative Council, detached from the Viceroy's quarters.

Mr. H. Baker (Financial Secretary to the War Office) said the promise he had made was simply an indication of the intention of the Secretary of State, and since then events had made it necessary to take an earlier decision. Early in January the Viceroy telegraphed a suggestion for the appointment of Mr. Lutyens and Mr. Baker. The latter gentleman was in South Africa, and it was necessary that he should return without delay. In a matter of this kind they were bound to consider the opinion of the Viceroy, who had taken the greatest interest in the subject, and upon whose judgment the Secretary of State relied. The Viceroy had expressed himself strongly in favour of an Indian style of architecture. The scope of the appointment of Mr. Lutyens and Mr. Baker was strictly limited to act as architects for Government House and one other important building. They would also have a general power to advise on the rest of the buildings. But with regard to the rest of the buildings, which were very numerous and varied, with the exception of

the two specific buildings mentioned, it was the present intention of the Secretary of State to allow competition to come in as far as possible, though there were obvious and great difficulties in the way of free and open competition. With regard to Captain Murray's question, he had nothing to add to the replies already given, but he assured him that although the two buildings referred to were to be brought under one roof, in every other respect they would be absolutely separate.

Fresco Painting at the Palace of Tiryns.

Mr. Noel Heaton, B.Sc., F.C.S., has presented the Institute with a copy of his Paper, reprinted from *Tiryns II.* (Athens, 1912), giving an account of his investigations into the nature and method of execution of specimens of painted plaster from the Palace of Tiryns. The Paper forms an interesting supplement to Mr. Heaton's Paper published in the *JOURNAL* of the 30th September 1911, in which he traces the development of the use of lime-plaster and fresco decoration from the earliest times to the second Late Minoan period. Mr. Heaton subjected to analysis a number of fragments of wall plaster from the Early and Later Palaces of Tiryns and of floor plaster and cement from the Later Palace. A comparison with the plaster from the second Palace of Knossos shows it to be practically identical in composition, pointing to the fact that the craftsmen of Tiryns worked on a tradition handed down from the Palace Period at Knossos. The method of preparing the wall surface differed, however, from that adopted at Knossos. The plaster at Knossos was uniformly fine in texture, and was laid on in two coats identical both in composition and structure, the second coat to receive the painting being nearly 1 cm. in thickness. At Tiryns the second coat seemed to be barely 2 mm. in thickness; it was much finer in texture than the main substance of the plaster, and could be removed from the latter by careful scraping with a knife, a distinct difference in hardness and texture being felt when the line of division was reached. With the exception of the green, the pigments are identical with those used in Crete during the Late Minoan period, and the colour schemes of the paintings are substantially the same. No green pigment was used in the frescoes at Knossos, a green colour being obtained when required by mixing blue and yellow. Mr. Heaton has no doubt that the painting was executed in true fresco, the pigments being painted on to the wet lime without the use of any medium except water, and fixed to the surface by being permeated with the soluble hydrate of lime and its subsequent conversion to the insoluble carbonate. Illustrations are given showing that the pigment has penetrated into the surface in a way that is only possible in fresco painting. Mr. Heaton considers that there is no room for doubt that the technique employed in painting was identical with that practised at Knossos in earlier times.

OBITUARY.

Frederick Thomas Reade [*Hon. A.*].

FREDERICK THOMAS READE was born at Liverpool in 1833, and was apprenticed in 1848 to Messrs. N. and M. Scott, Engineers and Iron Founders in Birkenhead, whose works have since been absorbed into the great shipbuilding works of Messrs. Cammell Laird & Co. He was afterwards engaged as engineering draughtsman in the office of Mr. James Hodgson, a prominent naval architect in Liverpool, and one of the pioneers in iron construction of sailing-ships and steamers. In this office, he was associated with the late Calcott Reilly, afterwards Professor of Mathematics at the Royal Indian Engineering Staff College at Cooper's Hill, with whom he maintained a lifelong friendship and whose eminent mathematical attainments and example greatly influenced Mr. Reade's career. Thus his preliminary training was a useful blending of practice and theory, which enabled him in after life easily to win the entire confidence of those who sought his advice.

He migrated to London in 1856, and soon after entered the drawing office of Messrs. Lawrence Bros., of the City Iron Works, Hoxton, where he remained for nearly twenty years. About 1875 he commenced independent practice as a Consulting Engineer, chiefly in connection with the iron and steel construction of buildings, and in this capacity he was employed by many eminent architects. In conjunction with the City architects, Sir Horace Jones and Mr. Alex. Peebles, he designed the iron construction of the Corporation Markets in Smithfield, and the Guildhall Council Chamber. He assisted the former of these gentlemen in working out the scheme for the Tower Bridge, which formed the basis of the Corporation's application to Parliament for their Act. In 1884 he personally conducted a Committee of the Corporation to inspect a number of the most important opening bridges in Scotland and on the Continent, and his subsequent report confirmed the Corporation in adopting the "bascule" pattern of bridge. He designed the method and apparatus by which the Wellington Statue was lowered intact from the top of the arch on Constitution Hill.

In 1877 he was elected one of the first Honorary Associates of the Institute, and in 1889 he read a Paper before the Institute on "The Application of Iron and Steel to Building Purposes." In 1883 he became an Associate Member of the Institution of Civil Engineers. Later he took into partnership Mr. H. Reilly, a son of his old friend, and together they designed and superintended the iron and steel construction of many important buildings. Among them may be mentioned the Scarborough Spa and Nottingham Guildhall for Messrs. Verity & Hunt; the Haymarket Stores and extension of the Criterion for Mr. T. Verity; the Gloucester Guildhall for Mr. G. H. Hunt; the Imperial In-

stitute, the Royal English Opera House, the P. & O. Offices, &c., for Mr. T. E. Colclutt; the Birkbeck Bank Buildings for Mr. T. E. Knightley; the Tate Gallery, the Trocadero Restaurant, Claridge's Hotel, Spurgeon's Tabernacle, the Dental Hospital, &c. &c.; several buildings in Liverpool for Mr. Edmund Kirby, and a number of buildings in Hong Kong, principally "godowns," for Messrs. Leigh & Orange.

His partner having broken down in health and become quite incapacitated, Mr. Reade disposed of the practice and retired in 1901, taking advantage of his well-earned leisure to make a twelve months' tour in China and Japan. Since then he has served on the Science Standing Committee of the Institute, and represented the Institute on the Engineering Standards Committee, where his knowledge and experience were of great value and assistance. He was fond of travel and visited many foreign countries. Only last spring, at the age of seventy-nine, he went off alone and spent several weeks in Portugal.

He died, after a short illness, on the 16th January at his chambers in Great Ormonde Street, and his funeral on the 20th January at Golder's Green Crematorium was attended by many intimate and devoted friends.

ROB. GRIGGS [A.].

Lieut.-Colonel Francis Robert Newton Haswell, V.D., of North Shields and Monkseaton [*Fellow*, elected 1872], died on the 18th November 1912, at the age of seventy-eight. Born at Southwark, the son of the Rev. Partis Haswell, he was educated at Taunton, and received his professional training in the office of Mr. John Middleton, architect, of Darlington, with whom he was placed as pupil in 1849. He started in independent practice in North Shields in 1856, and soon laid the foundations of an extensive business, his early work consisting principally of church, chapel, and school buildings. Among them may be mentioned the Methodist New Connexion Chapels at Wallsend and S. Shields; Wesleyan Methodist Chapels at Gateshead (with schools), Shieldfield (Newcastle-on-Tyne), Corbridge, Sacristan, Tynemouth, Jarrow, South Bank, Blyth, Bishop Auckland, Bensham, Felton, Rowlands Gill, West Norwood, and Wesleyan Memorial Church, N. Shields; St. Nicholas' Chapel, Topsham, Devon; Holy Trinity Church, N. Shields; Restoration of Ronaldkirk Church; Lutheran Church, N. Shields; Egglestone Parish Church, Teesdale; Restoration of Barnard Castle Parish Church, and of the Choir for Trinity College, Cambridge, Ninebanke Parish Church, Cemetery Chapel and Lodge, Barnard Castle; Chapels and Lodge, Newsham and South Blythe Cemetery. He was the architect of schools at East Jarrow, Earsdon, St. Peter's National Schools, N. Shields, Throckley Undenominational School, the Tynemouth School Board Western Schools, Eastern Schools, Cullercoats Boys', Percy Main, Chirton, &c.

He was architect to the School Board of Tynemouth from 1878 to 1903, and was at one time joint architect to the Newcastle-upon-Tyne School Board. In 1871 he designed and carried out the Benton Railway Station for the Blyth and Tyne Railway Company; in 1888 the Tynemouth Victoria Jubilee Infirmary; and in 1902 the Conservative Club, N. Shields. He also carried out many residences in the districts of N. Shields and the two northern counties, as well as the dry docks at N. and S. Shields. Col. Haswell was a promoter of the volunteer movement in Tynemouth, and was one of the original members of the Tynemouth Artillery Volunteers, reputed the premier corps of the county. He received his V.D. decoration in 1891 and retired in 1895, retaining his rank and permission to wear his uniform. He was a member of the Council of the Northumberland and Durham Archaeological Society since its foundation, and was Corresponding Secretary to the Society for the Preservation of Ancient Monuments.

John Henry Eastwood, who died on the 24th January, at the age of seventy, was elected Associate of the Institute in 1881. He served his articles with Mr. M. C. W. Horne, of Guildford Street, London, and was afterwards Chief Assistant to Professor Aitchison, R.A., and later to Mr. F. P. Cockerell. His chief works are: St. Anne's Cathedral, Leeds; Church of St. Joseph, Bridgford, Nottingham; Church of the Sacred Heart, Hems-worth; additions to the Church of SS. Mary and Gregory the Great, Barnet; Church of the Guardian Angels, Mile End; St. Anne's Schools, Woodhouse Square, Leeds; altar of canopied work for St. Barnabas' Cathedral, Nottingham; Roman Catholic Schools, Moorhorpe, etc.

THE EXAMINATIONS.

The Final: Alternative Problems in Design.

The Board of Architectural Education have approved the designs submitted as Testimonies of Study under the new regulations by the under-mentioned students:—

Subject VI. (a): A COLONNADED SCREEN.—Cedric Ripley, R. S. Wilshire, W. E. Woodin, A. H. Owen, A. L. Freamer, E. F. Bothwell, L. S. Henshall, A. F. Kaltenbach, P. G. White, F. Williamson, D. H. Walker, Mary Shewen, E. Hasmann, R. Duckett, W. E. Foale, E. A. L. Martyn, J. O. Thompson, E. N. Frankland-Bell, P. T. Wilsden, E. Gee, A. E. Davidson, A. E. Stott, H. E. Rooley, B. N. Weekes, W. H. Thompson, R. A. Walter, J. O. Cheadle, F. Ratcliff.

Subject VI. (b): A FIRE-RESISTING LOCK-UP WAREHOUSE.—O. Newbold, R. A. Barber, A. R. Shibley, G. Davidson, R. S. Dixon, E. R. F. Cole, P. D. Bennett, B. Newbould, A. Wilson, S. G. Soper, J. A. Clarke, F. O. Lawrence.

COMPETITIONS.

Municipal Offices Competition, Barnet.

Public Hall Competition, Horbury.

The Competitions Committee request Members and Licentiates not to take part in the above competitions until a further announcement is made that the conditions have been brought into conformity with the Institute "Regulations." The Committee also request competitors to return their copies of the conditions immediately to the promoters.

MINUTES. VII.

At the Seventh General Meeting (Ordinary) of the Session 1912-13, held Monday, 3rd February 1913, at 8 p.m.—Present: Mr. Reginald Blomfield, A.R.A., President, in the chair; 34 Fellows (including 12 members of the Council), 42 Associates (including 2 members of the Council), 8 Licentiates, and numerous Students and visitors—the Minutes of the Meeting held 20th January 1913, having been published in the JOURNAL, were taken as read and signed as correct.

Mr. E. Guy Dawber, Vice-President, acting for the Hon. Secretary, announced the decease of John Henry Eastwood, Associate, and it was resolved that a vote of sympathy and condolence be passed to his near relatives.

The following Members and Licentiates attending for the first time since their election were formally admitted by the President—viz. William Haywood and Oswald Partridge Milne, *Fellows*; Herbert John Brownlee, Francis Renton Barry, jun., John Alfred Cheston, Thomas Stanley Hosking, Frederick William Moore, John Charles Robinson, and Philip Edward Webb, *Associates*; Victor Augustine Flower, *Licentiate*.

Mr. E. Guy Dawber announced that the Council proposed to submit to His Majesty the King the name of Mr. Reginald Blomfield, A.R.A., as a fit recipient of the Royal Gold Medal for 1913, in recognition of his executed works as an architect, and his distinguished contributions to the literature of architecture.

The Secretary announced that the following candidates, being found by the Council eligible under the Charter and By-laws, had been nominated for election:—As FELLOWS (11): George Wilfred Allsop [A.], Auckland, N.Z.; Edward Greenop, P.A.S.I. [A.]; John Albert Gill-Knight [A.]; Alexander George Robertson Mackenzie [A.]; George Oakley Scorer [A.]; Reginald Henry Spalding [A.]; Arthur James Stratton, F.S.A. [A.]; Granville Edward Stewart Streathfield [Licentiate, passed the Examination qualifying for Fellowship July 1912]; William John Walford [A.]; Charles Frederick Ward, Assoc. Inst.C.E. [A.], Newport, Mon.; George Henry Widdows [A.], Derby. As ASSOCIATES (40): Albert Robert Allen-Lodge, F.S.I.; Percy Maguire Andrews; John William Barrow; Henry Joseph Blenkinsopp, Selby, Yorks; Frank Asquith Brewerton, Manchester; Leonard Holcombe Bucknell; Arthur Stanley George Butler; David John Chisholm; Leopold Edmund Cole; Archibald Cooper, Newbury; Ralph Henry Dewhurst; Thomas Oliphant Foster; Edmund Herbert Gibson, Harrogate; Hugh Andrew Gold; Charles Black Gordon; John Garfield Hinton, Winchester; T. Frederick Ingram; Samuel Douglas Meadows; Stanley Wayman Milburn, Sunderland; Harold Edward Moore; Colin Hay Murray, East-

bourne; William Godfrey Newton; Alex. Pease, Worthing; Rees Phillips; Richard Mountford Pigott; Ernest Alexander Rahles Rahbala; Claud Boileau Reid; Thomas Leonard Roberts, Sunningdale; Harold Seymour Scott, Birmingham; Henry Solomon, Winchfield, Hants; William James Stenner, Bristol; Basil Martin Sullivan; Sutherland-Graeme; William George Thoms, Nottingham; Sidney Stanley Waghorn; Charles Percival Walgate; Harry William Weedon, Birmingham; Judah Weinberg; David Williams, Salisbury; Stanley Hurst Williams, Sheffield.

The President delivered an ADDRESS TO STUDENTS, and Mr. W. Curtis Green [F.] read a CRITICISM OF THE DESIGNS AND DRAWINGS submitted for the Prizes and Studentships for the current year.

The Presentation of Prizes was made by the President as follows:—

INSTITUTE SILVER MEDAL (ESSAYS) AND TWENTY-FIVE GUINEAS.

The Medal and cheque for £25 5s. to Mr. Wm. James Davies.

Certificates of Hon. Mention and cheque for £5 5s. to Messrs. Martin Shaw Briggs and C. Percival Walgate respectively.

INSTITUTE SILVER MEDAL (MEASURED DRAWINGS) AND TEN GUINEAS.

The Medal and cheque for £10 10s. to Mr. H. C. Mason.

Certificates of Hon. Mention to Messrs. W. L. B. Leech, Gordon Hemm, and B. P. Gaymer.

SOANE MEDALLION AND £100.

The Medallion to Mr. James M. Whitelaw.

Certificates of Hon. Mention to Messrs. H. Chalton Bradshaw and Robert W. Cable.

OWEN JONES STUDENTSHIP (£100).

Mr. Wm. Harvey introduced as the winner of the Studentship.

Certificates of Hon. Mention to Messrs. H. P. Huggill, Ivor Beaumont, and Walter M. Keesey.

PUGIN STUDENTSHIP (SILVER MEDAL AND £40).

Mr. Wm. Paterson introduced as the winner of the Studentship.

Certificates of Hon. Mention to Messrs. Joseph Hill and F. E. Howard.

TITE CERTIFICATE AND £30.

Certificate to Mr. Cyril A. Farey as winner of the Prize.

Certificate of Hon. Mention to Mr. Bryan Watson.

ARTHUR CATES PRIZE (FORTY GUINEAS).

Cheque for £42 to Mr. Charles F. Batt as winner of the Prize.

GODWIN BURSARY (£65).

Mr. Charles Holden introduced as winner of the Bursary.

HENRY SAXON SNELL PRIZE (£60).

Mr. Vincent Hooper introduced as the winner of the Prize.

PUGIN STUDENTSHIP, 1912.

Pugin Silver Medal and cheque for £20 to Mr. James Macgregor.

OWEN JONES STUDENTSHIP, 1911.

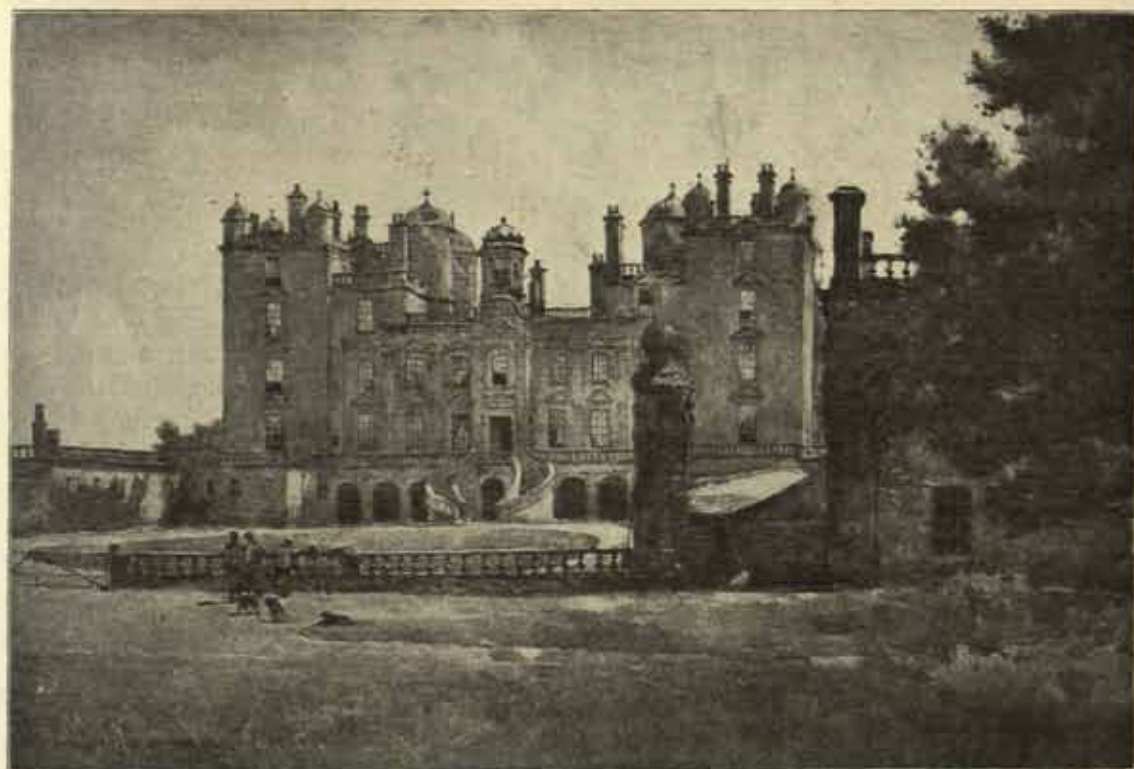
Cheque for £50 to Mr. A. W. Bellis.

OWEN JONES STUDENTSHIP, 1910.

Cheque for £10 10s. to Mr. W. O. Miller.

On the motion of Mr. Frank Dicksee, R.A. [Hon. A.], seconded by Sir L. A. Selby-Bigge, K.C.B., a vote of thanks to the President and Mr. Curtis Green for their Addresses was carried by acclamation.

The proceedings then closed and the Meeting separated at 10.25 p.m.



DRUMLANRIG CASTLE.

SCOTTISH ARCHITECTURE FROM THE FIFTEENTH TO THE SEVENTEENTH CENTURY,

WITH SPECIAL REFERENCE TO THE FRENCH INFLUENCE THEREON.

By ALEXANDER N. PATERSON, M.A., A.R.S.A. [F.].

Illustrated with sketches by the Author and photographs by Mr. John Fleming, Glasgow.

Read before the Franco-Scottish Society (Scottish Branch), Glasgow, Edinburgh, and Aberdeen, 1911-12.

THE history, character, and temperament of a people are reflected in its architecture more vividly perhaps than by any other manifestation of national spirit, except, when thoroughly understood, by its language. That being so, the sturdy independence of Scotland as a nation and people in relation to its neighbour south of the border, and its close connection, social and political, during many centuries with France, are vital factors which we might confidently expect to have produced, first, a strongly marked national style in Scottish architecture, and, second, a manifest French accent in the rendering of it, under the influence of that country so much more settled, richer, and further advanced in the Arts.

Our thesis remains true, our expectations are justified, yet the results under both heads are disappointing.

Why this should be so a closer analysis of the position, economic and historical, will show. Scotland, from the close of the fourteenth century to the beginning of the seventeenth, had a language of its own, and one with innumerable examples of the French impress upon it. If a separate language, if on words the accent, why not so with buildings? We have for one thing to reckon with an outstanding difference between language and architecture. The former is a daily, an hourly necessity for all; it costs nothing, unless maybe a mild intellectual effort. And

if, as is popularly supposed, more thought means less speech, and the Scot is notoriously parsimonious of words as of "siller"—the motto "Sen word is thral and thoct is free, keep weil thy toun I coinsell thee," carved over a seventeenth-century doorway, being delightfully characteristic in that respect; still, even for that process of excogitation so dear to our countrymen, the *word* is a necessity in the daily life alike of peace and war. Building, on the other hand, costs money, or its equivalent. Especially is this the case with those large works which are of most historical value to the investigator, for, in the nature of things, it is principally the more important examples which survive the wear and tear of the centuries. But not only is wealth essential; peace also, and a certain degree of leisure, are likewise required for their full development, together with some measure of civilisation and culture, and, last, what may be called a national entity. All these factors combined and prevailing over a considerable period may be held essential to the production of an indigenous style in architecture, and it is only towards the formation of such, or, when it is formed, as an added attribute producing a certain

variation of character in the original stock, that we can rightly recognise a foreign influence.

For a distinction exists, and it is important that it should be appreciated, between architecture in Scotland and Scottish architecture. No one, to take a self-evident example of this, would say for a moment that the work carried out by the Romans during their occupation of the country, and of which so many interesting remains have recently been laid bare, was in any sense Scottish, although the buildings were erected in Scotland. Yet the same is true in kind, if not quite to the same degree (with the exception of the Celtic work of the sixth and seventh centuries), of all the architecture which Scotland can show up to the

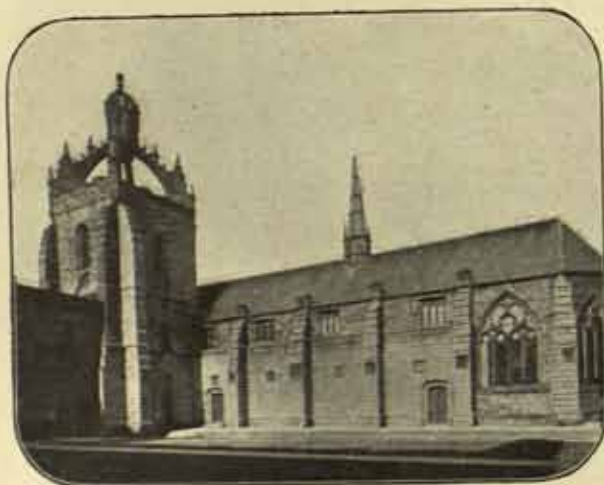


FIG. 1.—KING'S COLLEGE CHAPEL, ABERDEEN.

fifteenth century, and in some degree even from that period till the Reformation. Nor is this surprising when we learn from the records of history somewhat of the political and financial experience of the country through the centuries. Bearing in mind the essential factors in the creation of an indigenous style of architecture, we find that Scotland was either wholly deficient in these, or, when endowed, endowed at cross purposes.

From the beginning of the eleventh century, when, with Duncan I. on the throne, the country was in process of being gathered together under one rule, till the end of the twelfth, there was growth towards a national entity; but for the first two of these centuries this was achieved only through constant internal strife. During the more settled years which followed from William the Lion till the death of Alexander III., or, roughly speaking, during the whole of the thirteenth century, when, according to Hill Burton, the country was more prosperous than at any subsequent period until the Union, it yet remained, as regards the mass of the people, without an approach to wealth or culture, the common folk dwelling in wood and earthen hovels, the King and nobles, in whom, apart from the Church, all wealth and power were centred, in palisaded or stone-walled enclosures of the simplest description. (The stage-setting of *Macbeth* by our actor-managers of to-day is very fine, no doubt, in its bravery of pillared halls, its vaults and arches, but allowance must be made for the scene-painter's imagination and the

popular demand for architecture on the stage, if not *off* it.) During even this later period also the clergy and nobles were Scottish in name only, the monasteries in close touch with and transplanted bodily or regularly recruited from the older established settlements south of the border or in France, the nobles, Saxon or Norman by birth, and holding their lands in Scotland or England, or both, by force of arms or the accident of Royal favour. While, therefore, this was a period of great building activity in Scotland, during which many cathedrals, abbeys, and castles were erected, there is no such difference between these and the works of similar nature built in England as would entitle them to be re-regarded as indigenous to the north. The only difference, indeed, apart from the naturally greater number and extent of the English examples, is one of time, the style of the north following that of the south at an interval of approximately half a century.

During the fourteenth century the country found itself; the national consciousness was roused and fostered through the long and heroic struggle of the War of Independence; but fighting, with the attendant devastation of the country, left neither opportunity nor means for building.

In France, too, the position was in many respects alike. During the fourteenth century she had to pass through the ordeal of the Hundred Years' War with England, La Jacquerie, the Black Death, the alienation

of the Duchy of Burgundy, and the troubles in Flanders. Following on the brilliant achievement of the preceding century, French Gothic architecture was practically annihilated. Yet it was during this period, and under the stress of those political circumstances which denied to both countries for the time being any national expression in architecture, that the compact between them was closest, their mutual intercourse most frequent.

The following century assumes a better aspect from our present point of view. The nation was consolidated; the Jameses, whose period extends from the beginning of the fifteenth



FIG. 2.

century to the middle of the sixteenth, were themselves patrons of the Arts—some of them, indeed, better patrons than kings—the French alliance was continued, the intercourse between the Courts, if not the people, became still more intimate, with the resulting French marriages of James V., and now for the first time distinctive styles of architecture emerge, both ecclesiastical and domestic. These were based, of course, as all styles are, on what had gone before, but they grafted on the earlier English or Anglo-Norman work which had hitherto been the only rule, certain characteristics of the later and more purely French styles, something also, particularly as regards domestic building, from the Low Countries, yet transforming all these elements, as we shall see, and vitalising the whole with a national character and spirit, so as to produce in truth a Scottish architecture.

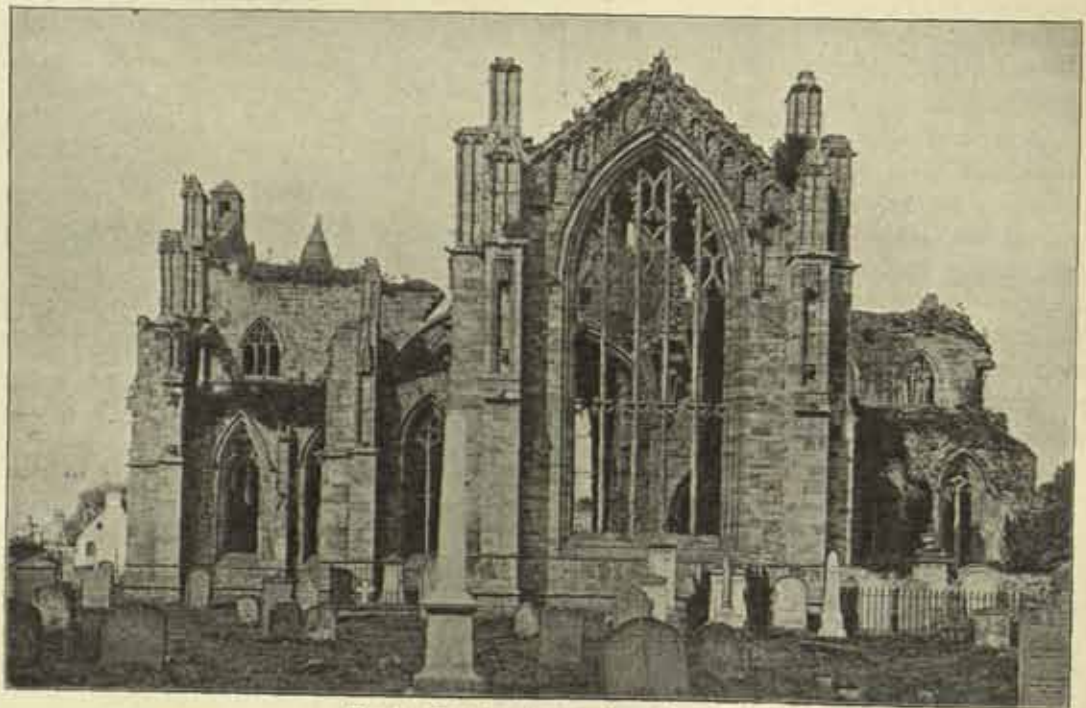


FIG. 8.—MELROSE ABBEY: EAST GABLE.

It came when, throughout Western Europe under the influence of the Reformation, the Roman Church was already tottering, when the rearing of cathedral and monastery was turned to their sack and pillage, or, at the least, their alienation to those ignorant of their beauties and rapacious of their wealth, with the consequence that in ecclesiastical architecture the Scottish style never reached its full development. More fortunate was the domestic art, which flourished from this time, and on through the seventeenth century, to pass almost if not quite away with the interfusion of English ideas which followed on the Union of the Parliaments in 1707.

The architecture in Scotland of the earlier periods was, without doubt, at once more important and of finer accomplishment than what followed, but it does not come within the scope of this paper. Our subject-matter begins with the fifteenth century. By that time a new divergence is found in the architecture of France, England, and Scotland; the earlier developments which led up to it are familiar, and may be but glanced at in passing.

England, having seen the first Pointed style merge into the Decorated, is now following everywhere the lead of the master-builders of Gloucester Cathedral in its extension works of

1351 to 1412, and is passing from the Decorated to the Perpendicular, with its wide and flattened arches, vertical mullioned tracery in window and wall, and fan vaulting. France, originally the pioneer in these glorious early years when with logical artistry it slowly evolved from the Romanesque the soaring architecture of counterpoise in vault and buttress, has suffered a century of relapse, and is now borrowing from England in turn to produce from that country's Decorated a new and characteristic manifestation of the national spirit in its Flamboyant, sinuous and flame-like in the counter curves of arch forms and tracery. Meanwhile Scotland, cut off from her former dependence upon England by the animosity and jealousy engendered by the war, has at last also developed an architecture with a character of her own; and this she continued to employ to the extent of her modest resources till the beginning of the seventeenth century alongside of the Renaissance style, which for over a hundred years had been overspreading Western Europe from its fountain-head in Italy, and had by that time almost entirely submerged both French and English Gothic.

Even apart from lack of wealth to execute them, the time for building the great shrines of the Catholic Church had passed away. For these both faith and knowledge were lacking, and, in Scotland at least, the work was confined, apart from the restoration of earlier buildings, to a few collegiate and parish churches of moderate dimensions.

What were the characteristics of this last and most indigenous phase of the Pointed style in Scotland? Prevailing over all, the English sobriety of design in the mass carried a degree further, with a resultant bluntness, one might almost say dourness, highly characteristic of the climate and people of the north, and, at the same time, a certain elegance and grace in detail, cumbrous though it be in interpretation, essentially French. The window tracery, with one or two doubtful exceptions, is never Perpendicular, by this time in universal use south of the border, but nearly always in its essence Flamboyant. In the eastern termination of the choir, in contrast to the square end universal in England, the three-sided apse characteristic of the French "*chevet*" is generally adopted, and this notwithstanding the structural difficulties involved in the working out of the vaulted roof, which we can see to have greatly troubled the contemporary designers and builders. Throughout the work of this time, indeed, with a few brilliant exceptions probably by French, or French-trained master-masons, a certain amount of ignorance or, at least, inexperience of Gothic art is evident. Ethics in Reformation times and ever since have been too aptly confused with aesthetics; with the "dinking doon" of the "idols" (as the popular play of the Reformers was called in the North) was involved not only the destruction of their own cunning beauty of design and craft, but the tradition and skill by which they were produced. Yet even



FIG. 4.—TULLIEDOLE, KINROSS-SHIRE.

inexperience, if combined with a native artistry of insight and determination to "see the thing through," at times produces beautiful and interesting results, and such are not wanting in the Scottish work of the period. Groined stone vaulting over large spaces, with the corresponding equipoise of flying buttress and pinnacle, in which lay the essence of the Pointed style of architecture, was practically unknown, but, as alternative to the timber roofs generally employed, a simple form of pointed "barrel" vault, supporting in turn an outer roof of carefully-wrought flagstones, is not infrequently used.

The buttresses are generally somewhat stunted; plain and solid—like their builders—but with rather elaborate canopies and corbels for statues placed on their fronts without recessed niches, and finished with stunted square pinnacles with crocketed finials. The arch mouldings are frequently enriched with a succession of small cusps—a characteristic feature of French fifteenth-century work.



FIG. 5.—PRESTON TOWER.

A special character is noticeable also in the towers and spires erected at this time. The latter, somewhat squat in form, in harmony with the mass treatment referred to, are generally decorated with bands of enrichment, and more especially with a series of "lucarnes" or dormer windows, a treatment common in France and the Low Countries, and due to the influence of one or both. Again, in the open crown termination of the towers of St. Giles, Edinburgh, and King's College Chapel [fig. 1], Aberdeen (formerly also at the parish churches of Haddington and Linlithgow), we have a delightful and purely Scottish feature, based possibly on the combination of spirelets and flying buttresses in some French or Netherlandish examples, but with an outcome structural and artistic entirely original.

Many works of this period have been entirely swept away or hopelessly mutilated, one of the most complete examples—Trinity College Church, Edinburgh, which till within a generation adorned the valley between the old and new towns—having been destroyed to make way for the remorseless railway; and much of it is difficult to analyse and illustrate, owing to its having been incorporated with or superposed upon earlier work. But instances showing the special characteristics referred to may be seen in parts of Paisley Abbey, in the upper portion of the nave gable, and also in the curious corbelling-out of the passage at the triforium arcade, of which a prototype is found in Rouen Cathedral; in Bishop Lauder's work at Dunkeld Cathedral; in the choir and other parts of Iona; in the west front and spires of St. Machar's Cathedral, Aberdeen; in the churches of Rosslyn; St. Salvator, St. Andrews; Lady Kirk, Berwickshire; Whitekirk, Haddingtonshire; in St. John the Baptist, Perth. They occur in the later work of the Cathedral of St. Mungo, Glasgow, such as the spire, the upper story of the Chapter House, the Blacader Crypt or Aisle of Car Fergus, and the Screen. Yet further examples are furnished by the towers (in addition to those already mentioned) of Dundee, and, carrying the earlier tradition far past Renaissance times into the seventeenth century, of the quaint Fifeshire churches of

Anstruther, Cupar, Crail [fig. 2], and Pittenweem, together with that of the Tron, in Argyle Street, Glasgow.

It would be interesting, though quite impossible within the limits of a lecture such as this, to study these examples in detail. In one or other feature of each the French accent is evident. Nor are we left entirely to internal witness in this respect, sufficient though that be. Documentary evidence of the most interesting kind is also available. The King's "Master Mason" was a post regularly held under the Jameses, and was one on several occasions occupied by Frenchmen, while James V. had two paid functionaries of that nature, his Master Mason and his French Master Mason. Of such was the family of Merliounes, of whom Walter is indicated



FIG. 6.—ALLARDYCE, FORFARSHIRE.

by payments made as builder or designer (for it is difficult to assign the exact functions of the holder of the office in question) of St. John's, at Perth, and also of the Palace at Stirling, while close resemblance to that building in detail would lead to his being also associated with the east entrance of Linlithgow Palace.

Further, we have the two much-debated inscriptions built into the interior walls of that gem of Scottish architecture, Melrose Abbey. The first and earlier, carved on and about the lintel of the small doorway which gives access to the turret staircase, runs as follows:—

So gays the cumpas evyn about,
So trouth and laute du but duite,
Behald to ye hende q Johnne Morvo.

or, as paraphrased in the modern: "As the compass goes round true and loyal to the centre, so, without doubt, truth and loyalty shall be maintained steadfastly. Have regard to the end in all things, quoth John Morvo."

The later inscription with which we are more immediately concerned is carved on a small panel let into the wall over, and reads:—

John Morow sum tym callit was I
And born in Parysse certainly
And had in Kepyng al Masoun werk
Of Santandroys ye hys Kirk
Of Glasgw Melros and Paalay
Of Nyddysdayll and of Galway
I pray to God and Mari bath
And sweet S. John kep this haly
Kyrk frae Skaith.

Around these two inscriptions Mr. P. McGregor Chalmers, the well-known church architect and archæologist, has written an interesting little book, entitled "A Scots Mediæval Architect."

With much research and considerable ingenuity he endeavours to trace the work of John Morow the younger (the other inscription he ascribes to a grandfather of the same name) in the various buildings and districts referred to, and all executed towards the very end of the fifteenth century. The work of the "Paris-born" master in question is of a specially spirited and beautiful character, much superior both in design and execution to that in most contemporary buildings throughout Scotland. In some cases, as in the church work in Galloway and St. Andrews of his time, Mr. Chalmers can find, unfortunately, no trace of such a master hand, and can only fall back on the presumption, like the prophet Elijah hurling sarcasms at Baal, that there John Morow also "either is talking or he is pursuing or he is in a journey," and had left the work which he *ought* to have done to "an inferior hand."

In Glasgow Cathedral Mr. Chalmers finds Morow's work in the beautiful rood-screen, the



FIG. 7.—AMISFIELD.

completion of the earlier, but till then unroofed, aisle of Car Fergus, now known as Bishop Blacader's Crypt, with its magnificent groined vaulting, together with that of the aisles of choir and nave; at Paisley Abbey the great works carried out by Abbot George Schaw after his election in 1472, of which there remain only to-day two carved and inscribed panels from the "wall of aisler work" about a mile in circuit round his park for fallow deer. In Nithsdale the notable resemblance of the remains of the rood-screen in Lincluden Abbey to that in Glasgow provides

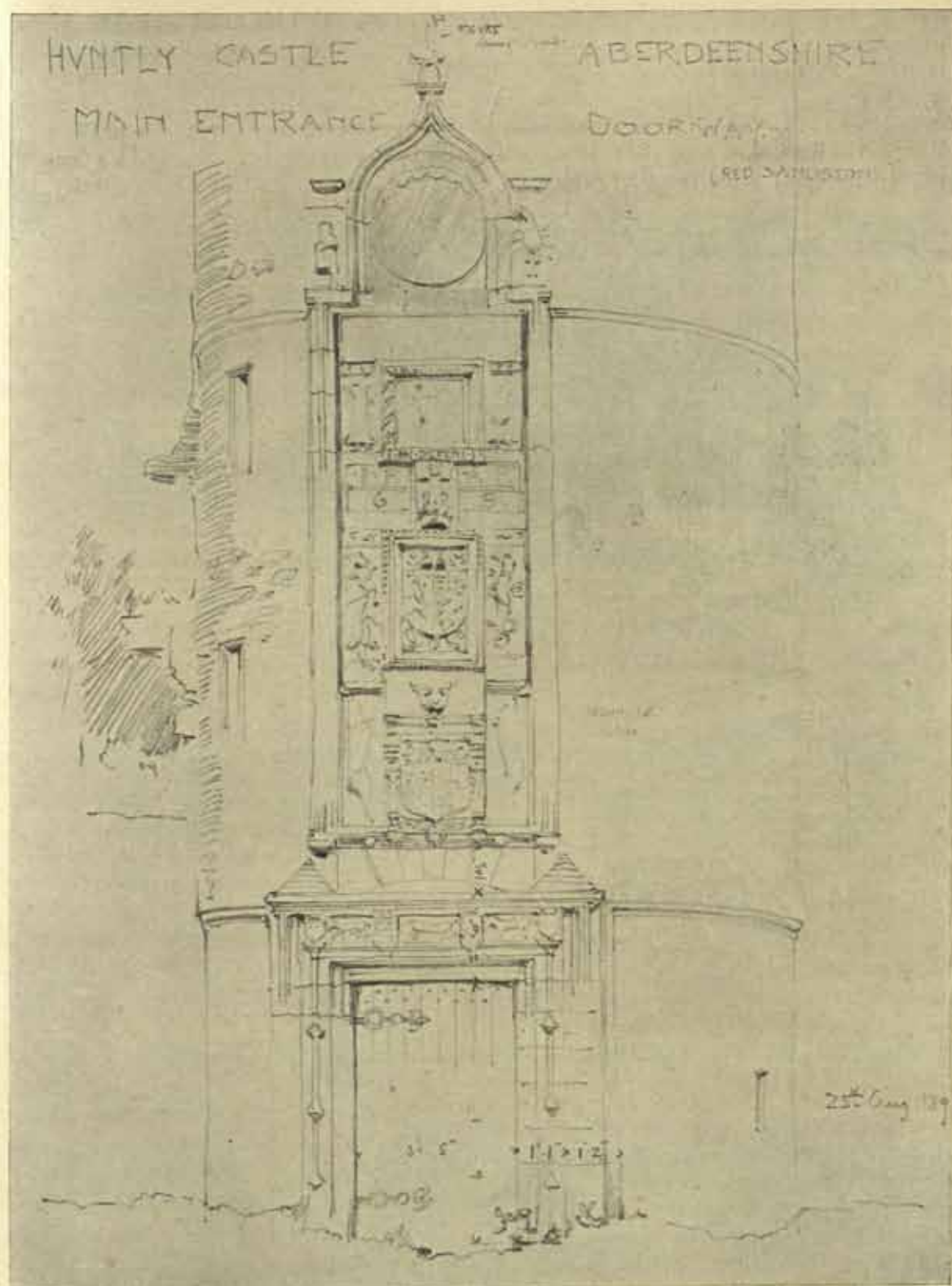


FIG. 8.

a ready clue to Morow's work there, but it is in Melrose itself that his finest achievements are to be found. There the same hand is thought to be traceable in the south transept doorway, inserted after the wall was built, with alterations made at St. John's Chapel by the insertion of new windows, and most conspicuously in the east end of the Abbey [fig. 3] and east walls of the transept carried out in or shortly after 1503. In these the marriage of James IV. with Margaret of England is supposed to be commemorated by the figures of the King and his Consort in the upper part of the beautiful gable, and, as a compliment to the lady's birth country, in

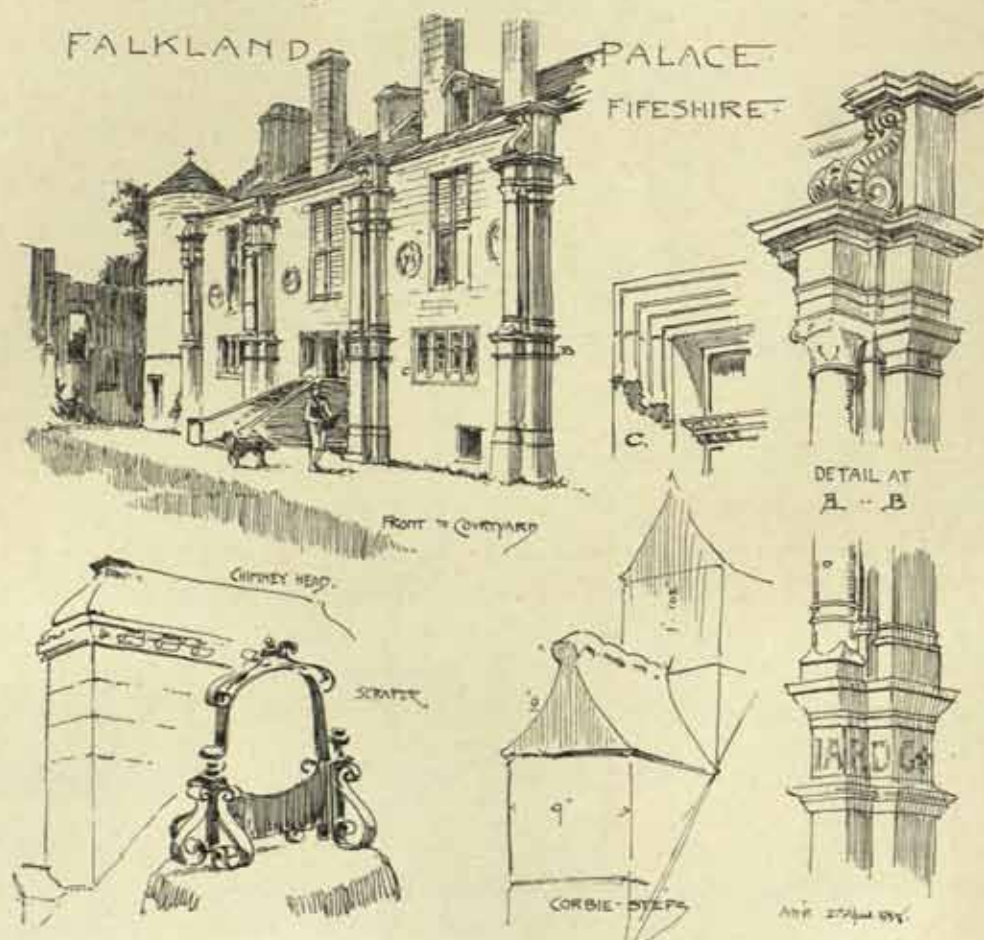


FIG. 9.

the adoption of the English Perpendicular tracery, though with highly interesting and original variations on the type.

Not less interesting to us in its indication of French influence, though of rather earlier date (and ascribed by Mr. Chalmers without any very apparent evidence to Morvo or Morow the elder), is the beautiful south wall of the nave, with its richly crocketed buttresses and window tracery of Flamboyant character.

Scottish ecclesiastical architecture may be said to have reached its climax in this work at Melrose of the early sixteenth century, but the declension in church building which ensued was accompanied, and in some degree compensated for, by a corresponding increase at once in the number and architectural interest of the houses, either in the shape of palace, castle, or

simple dwelling, erected at this period. The art, learned so late, of the Scottish designer and builder was not lost, but transferred to another channel.

And while the ecclesiastical work of the period we have been reviewing was, from the national point of view, but a phase of what was being done elsewhere with certain more or less marked local characteristics, it was otherwise with the architecture of the house as developed in Scotland from the fifteenth to the seventeenth century. Here we have something, in origin

largely indigenous, in growth entirely so, so that when French or other foreign influences affect it, they are clearly discernible as something super-added. The type of house I refer to is probably familiar to those who have travelled in Scotland, or studied the published records of its architectural remains; let us try to envisage it.

In plan, or disposition on the ground, most generally two oblongs, or a square and an oblong, set at right angles to each other so as to form a stunted L. The grey walls of stone or granite roughly dressed or "harled" (rough-cast) with lime and sand, rise abruptly from the grass to a height of two, and sometimes three, or even four, stories, shaped at the outer ends to high-pitched gables, with bluff chimneys growing from them, their steeply

sloping sides from eaves to chimney base serrated with the familiar crow or corbie steps. At the outer angles of the gables, and probably in the re-entering angle of the L, circular turrets grow out from the plain wall-face beneath, their overhanging curves supported on moulded stone courses projecting each a little beyond its lower neighbour, the no less familiar corbelling. Under the upper story, also, in more or less broken lines, runs the corbel course, and from the higher wall-face thus projected the topmost row of windows breaks through the eaves in high-



FIG. 10.

peaked stone dormers, rich in quaint carving of crest, monogram, date, or pious motto. The doorway in the angle between the two wings is similarly adorned with heraldic device and pithy phrase, sententious, cautionary or intercessory, carved on and over the lintel—"The mair I stand on oppen height, the mair my faultes are to sight," or "Peace be within thy walls, and Prosperitie within thy hous." A grey-slatted roof—or in the eastern counties at times one of pantiles—rises steeply above the walls, and runs in simple, unbroken lines, save where cut into by the conical tops of the turrets, from gable to gable. As a typical rendering of the picture may be taken Tulliebole, Kinross-shire [fig. 4], an excellent example of the Scottish dwelling of the seventeenth century, built at one time (1608) for domestic comfort, a projecting bartizan high over the entrance doorway the only suggestion of the lingering need for defence against attack.

Such was the type of house our Scottish forbears built for themselves, with, in the earlier examples, little variation on the main lines, while full of charming variety in detail, marking

them for their very own and sealing them, as it were, to their sons, and sons' sons after them, with the good man's and his dame's initials, in contrast to our terrace houses and villas of to-day, built "ready-made" by the gross to a single pattern—and a bad one at that!—the homes, if such they may be called, but of periodic "flittings." Racy are these old dwellings of the soil from which they sprang, and of the men and women who



FIG. 11.

were born and nurtured, loved and hated, lived and died, within their walls. By the nature of their thoughts and habits the roof-tree was moulded, while these by it were moulded in turn as by the mountain and the moor.

Such a type could not come into existence all at once, yet we find it spread over the whole country, from Orkney to the Solway, from St. Andrews and the Lothians to the shores of Ayr, and to Dunvegan, in far-away Skye, in the course of the comparatively brief period covered by five or six generations, and that at a time when communication and travel were limited to an extent difficult now to realise. It is entirely different from English domestic work of the same period; and while a certain superficial resemblance, particularly in the matter of turrets and corbelling, is observable between it and the architecture of the French châteaux of the time of Louis XII. and François I., so that its origin has by some been attributed to that country, the indigenous growth of the type may be understood and followed without difficulty, and the French and other foreign influences which affected its later development readily distinguished.

I have already made use of the analogy between the language and the architecture of a people. Scotland at this period was also rich in the possession of a language of its own, which is thus described by the late Dr. J. A. H. Murray: "It shared a common origin with English, and was, in fact, originally but part of the Northumbrian division of that language. After the establishment of Scottish independence in the fourteenth century, while in England it became lost except as a local dialect in the rapidly changing King's English of London, north of the Tweed and the Cheviots Northumbrian remained the language of a Court and a nation; it spread westward and northward over districts formerly occupied by British and Gaelic (or it may be Pictish) populations, from which it sustained modification, phonetic and structural; it received literary culture and especially contracted alliance with French and Latin on its own account, so as to acquire by the close of the fifteenth century distinctively and strongly marked features of its own not found in the cognate dialects of the North of England. From the close of the fourteenth to the beginning of the seventeenth century it was the vehicle of an extensive and, in many respects, brilliant literature, it was the medium of legislation and justice, and fulfilled every function of a national language. . . . Then followed the accession of James VI. to the crown of England, the transference of the seat of government to London, and the consequent disuse of the 'Scottish tongue' by the Court and nobility, who found it desirable to speak the King's English, and gradually became ashamed of their Scotch."

Almost word for word this passage might be used as a description of the origin and evolution of Scottish domestic architecture. In the simple square keeps known as "Peel Towers," common alike

to Scotland and Northern England in the fourteenth century, we have the original vernacular; these, in sundry modifications of plan and structural detail, acquired "distinctively and strongly marked features of their own"; the alliance with French and Latin—the latter in architecture, the Renaissance influence ultimately derived from Rome—is unmistakable in the work of the later Jameses and Mary, while to these might be added (as I think with regard to the language also) the effect of close commercial relations between the East Coast towns of Scotland and the Low Countries. Finally, we have the adoption of the English tongue architecturally also after the Union, at first gradually, and except as regards "local uses and outlying districts" in the use of Elizabethan ornament, tall grouped chimney-stacks, and other

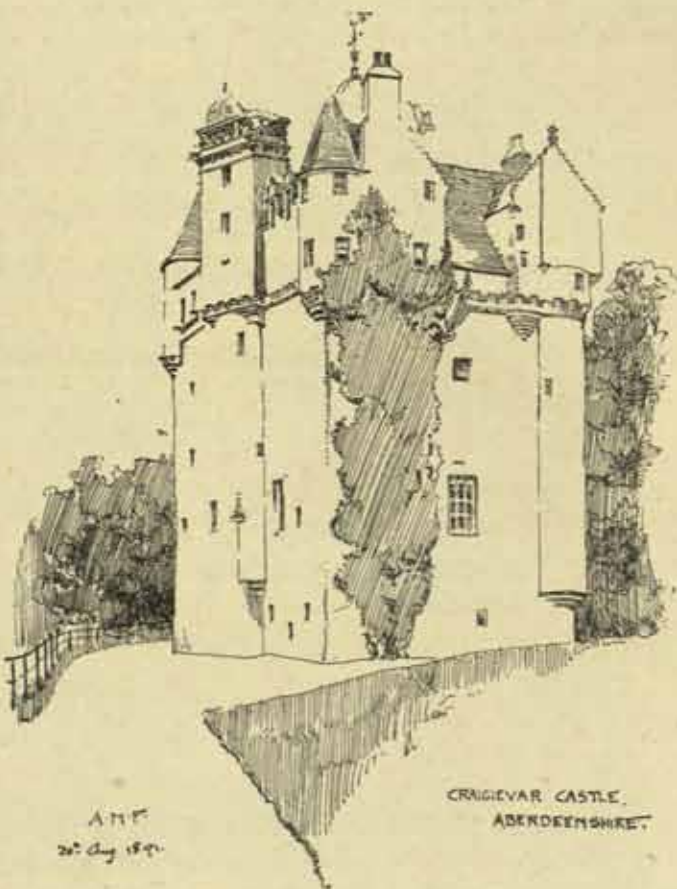


FIG. 12.

special features, but resulting before the close of the eighteenth century in the almost complete submergence of characteristics distinctively Scottish in the formal classic style of the Palladians and the personal variations thereon of the universal Adam.

Returning for a moment to earlier times, we find that by the end of the thirteenth century the Scottish kings and nobles had built themselves, like their compeers in France and England, many great castles, mighty piles within which the spirit of Feudalism would seem to be enshrined. As in ecclesiastical architecture, so in military, the earlier examples in these neighbouring countries were followed closely by the Scottish builders, though with a leaning to the French rather than to the English type in certain details. From this general prototype it might be expected that the domestic architecture of later and more settled times would take its origin in all three countries. Such, however, was not actually the case.

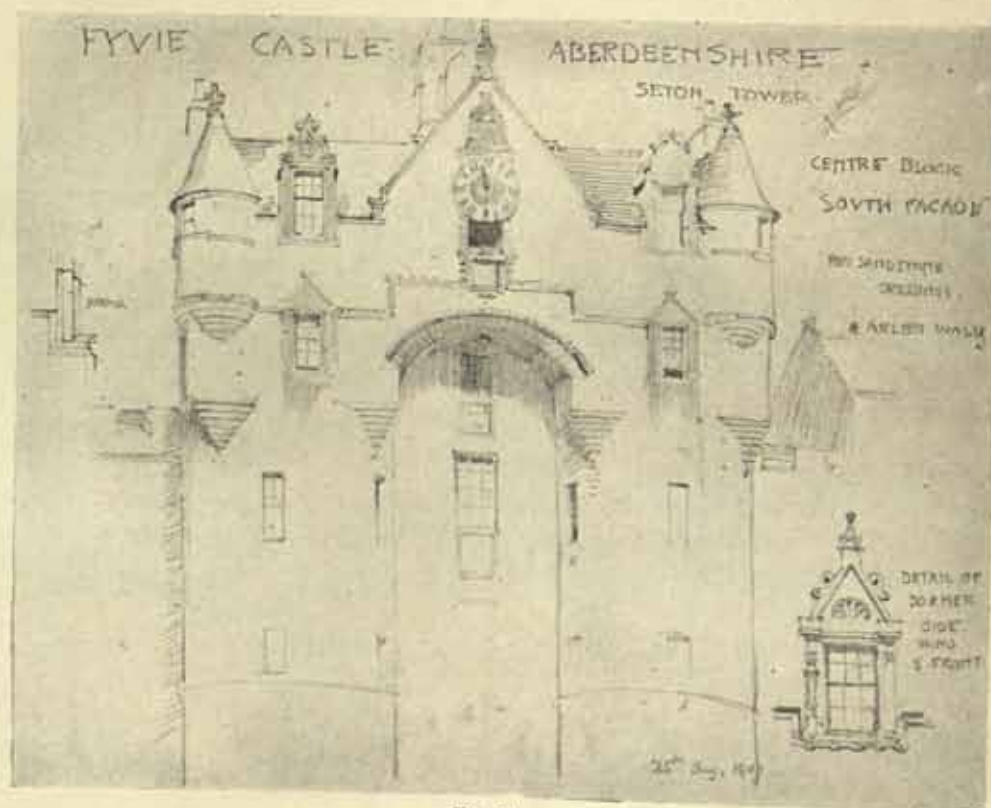


FIG. 13.

In England the great families found it more convenient by the fifteenth century to abandon as residences their fortified castles in favour of the manor houses or outlying farms to which they journeyed periodically to collect the rents in kind, thus manifesting early in their architecture the national characteristic love of home and comfort; and, in consequence, it was on these that the later English dwelling-house was modelled.

In France and Scotland, on the other hand, the fortress was the common point of departure (hence the superficial resemblance referred to), but there was a wide difference at once in the source of inspiration and the subsequent development. For in Scotland by the end of the fourteenth century the great castles had ceased to exist as a dominating influence. During the wars they were, indeed, mostly dismantled and demolished, in not a few cases by their owners themselves, owing to the discovery that they but offered strongholds for the grip of the

English on the country, and that for the hardy and mobile Scottish troops a guerilla warfare, with the mountain and moor as *points d'appui*, formed the most effective tactics.

Amid these natural fastnesses the smaller "Peel Towers" provided a home and rallying place. They were built in great numbers throughout the country, and from them there issued in direct descent the Scottish domestic style of the three succeeding centuries.

On the Peel Tower—in its simplest form a plain square or oblong building three stories in height, with entrance by an outside stair at the first-floor level, and a flat or platform roof—there were

grafted certain developments arising from the growing requirements of their various owners as they progressed first in knowledge of defensive warfare, and second in ideas of civilisation and comfort.

From such sprang the added salient wing, with resultant re-entering angle and L-shaped plan; the double salient or Z plan; the projected battlement carried clear of the wall by stone corbelling, with corner extensions in angle bartizans; turnpike stairs, one or more, in independent turrets, the vertical corridors of the time as opposed to our horizontal ones of to-day; the high-pitched and gabled roof, its side walls either carried up direct from the line of parapet or within it, to provide additional rooms, and the dormer

windows to give light to these. And in Scotland, from the earliest instances and onwards, the

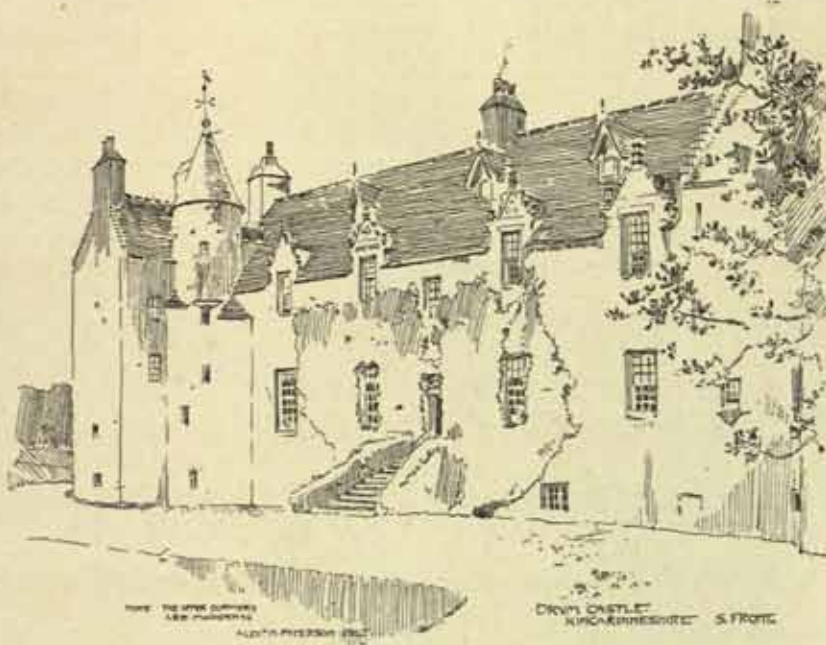


FIG. 14.

MVCHALLS CASTLE KINCARDINESHIRE.

SOUTH FRONT.

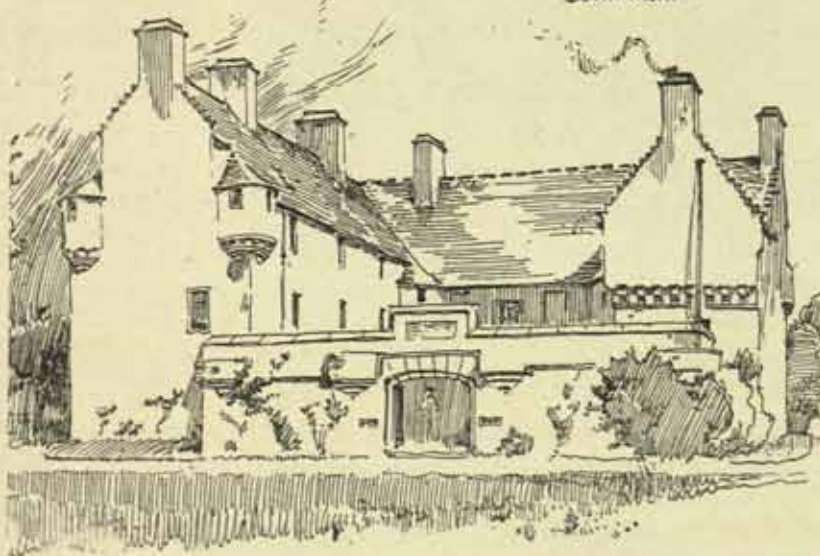


FIG. 15.

roof was always sloped on two sides only, for the other two the walls were carried up as gables—possibly owing to the simpler construction involved in the formation of chimney flues requiring of necessity to be raised above the roof-line. The bartizans or turrets being, from their position, left outside of the general roof-slope, were covered independently in conical or pepper-box form.

The corbie steps—though no doubt found convenient by these birds—were, needless to say, not provided for their accommodation, but were a simple constructional expedient for finishing the slope of the gables above the roof with small and easily transported stones in contrast to the longer and heavier ones required for a weather-tight finish on a smooth slope.

Such were the simple elements which composed the type of dwelling general throughout Scotland by the close of the fifteenth century. Of the earliest form of development from the



FIG. 16.—AUCHANS.

Peel Tower a suggestive example may be seen in Preston Tower [fig. 5], where to the simple fifteenth century keep, already four stories high, two more, within the parapet line, have been added in the seventeenth. It remained for the national spirit during the two hundred years which followed, when increased wealth, with longer and more frequent cessations from strife, provided more incentives to build, to lay hold on these characteristics, and, with little or no reference to their origin, to reiterate, and, as it were, to play with them, using them as an artist his pigments, a musician his notes, and so producing those charming variations on the original theme seen in the many houses of all degrees of importance erected during this period. Note, for example, the wanton play with corbelling over the entrance door at Allardyce [fig. 6] or the astonishing development in skyline from the simple square of the base in Amisfield, Dumfries-shire [fig. 7]. Like grace-notes to the melody were the mouldings, the ornaments, the heraldic devices intro-

duced with all the greater effect from their sparing use about the large and simple wall-space which they relieved.

The natural, simple origin and the indigenous growth may alike be seen in the almost entire independence of the Gothic or Pointed style which had hitherto been the only rule. In the earlier work of the Royal Palaces at Linlithgow, Stirling, and Falkland there is evidence of a traditional knowledge of the style in ogival and cusped arches, canopied niches, and mullioned windows, and some rude efforts to make use of the Pointed arch may be found in some of the smaller houses, as at Auchans, but in general the Scottish domestic style of this period was self-developed and self-contained.

Some of the features referred to, the conical roofed turret, the corbelled-out upper stories and dormer windows, may be found in much of the domestic architecture of Western Europe, and more especially in the French work towards the close of the fifteenth century under

Louis XII., but it is there much more purely Gothic in detail, and, given the common development in both countries from the fortress type, the independent evolution of its style by each up to a certain point is a more reasonable assumption than to attribute such remote similarity as exists to direct influence or conscious imitation.

The detail of the doorway of Huntly Castle [fig. 8], for instance, and of an endless number of less elaborate examples, is at once highly characteristic and frankly "home-grown."

While, therefore, church architecture in Scotland up to the fifteenth century was purely English or Anglo-Norman, and after that date but a Scottish variant with markedly French characteristics superadded, its domestic work, till the middle of the sixteenth century at least, was essentially indigenous, and any elements due to outside influence which appeared in it thereafter are clearly traceable as such, like a collar of foreign lace on a home-made suit of hoddie grey.

It is in the work of James V. that the change first appears. His father-in-law, Francis I., the successor of Louis XII., was at once a great builder and a devoted admirer of the new Renaissance, with the result that the intermingling of the Italian revival of classic design with the late French Gothic on the castellated type as root, which, with the assistance of Primaticcio as architect, he employed on his great château of Chambord and many smaller works, has become known as the "François Premier" style. A familiar and characteristic example



FIG. 17.—ROWALLAN.

of this work is the small house known as the "Maison François Premier," on the Cours la Reine, at Paris, on the façade of which may be specially noted the little moulded and enriched columns between the ground-floor windows, and over these the series of bas-relief portrait busts, each within a circular frame or garland. The same motive, either with similar heads or inclosing merely the monogram of the King, or his crest, the Salamander, constantly occurs on all the work of the period. We can well understand how the young James, after returning from his visit to the French Court, and setting about to enlarge and adorn his own Palaces of Stirling

and Falkland for the fit reception of his two successive foreign brides, Madeleine and Marie of Guise, would be seized with the desire to imitate and reproduce the new fashion of building which he had seen at Loches or Blois, may be in course of execution, and in all the dazzling freshness of the white limestone; how he would seek out among the French artificers such as would enter his service to carry out in our soberer freestone the forms of this earlier "Art Nouveau," though itself but a far-away echo of old Rome.

Thus, while the south front of the Falkland of James IV. is Scottish in essence and Gothic in detail, the interior façade to the courtyard [fig. 9], added by his successor about the time of his marriage to Madeleine in 1537, shows the quaint intermingling of the new style with the old, with all the favourite François Premier motives more or less faithfully reproduced. In Stirling, with still more quaint effect, though with less skill in the use of the new and more adherence to the old style, the same interfusion is to be seen.

In Italy, and, following the lead there, in France and England, the Renaissance had been taken up with enthusiasm, and, once introduced, spread like wildfire. But the Scots' love for the old ways was not to be won over so easily, and though many important houses were being built or added to at this time and during the remainder of the century, such as Glamis, Fordell, Kellie [fig. 10], and Tulliebole, already mentioned, all within easy reach of Falkland, or Castle Frazer and its neighbours, Midmar [fig. 11] and Craigievar [fig. 12], among others in Aberdeenshire, these show little or no departure from the native style.*

Diverse alike in importance, in general scheme, and in location, further examples (out of hundreds equally cogent to the argument), such as the Seton Tower of Fyvie Castle [fig. 13], the later portion of Drum Castle [fig. 14], both in Aberdeenshire, and erected respectively in 1603 and 1619,

Muchalls House, Forfarshire [fig. 15], 1619-27, Auchans [fig. 16], 1644, and Rowallan [fig. 17], Ayrshire, of about the same date in its later development, all alike show the same prevailing influence of the Scottish manner of conception, and in most cases in detail.

Not till the beginning of the seventeenth century, and then but cautiously, in the design

* The set-back to the Renaissance influence is attributed by Mr. Lawrence Weaver to the death of Stewart of Finnart, the King's master-builder or surveyor of all the Royal Palaces at this time, whom he also credits with its introduction from France. It is at best a double supposition, and the Scots' "canniness" seems to me to provide a sufficient reason, which even Finnart, had he for some time longer escaped his richly deserved fate, would have found difficulty in overcoming.—A. N. P.



FIG. 18.—PEPPERMILL DOORWAY.

of the main doorways (see, for instance, that at Peffermill [fig. 18], remarkable in its close resemblance to one within the François Premier staircase at Blois), or it may be in an isolated window to which some special importance was attached (as in the marginal note on the sketch of Kellie), was the Renaissance character introduced. Yet the first pioneers in the new movement in the home of its birth—Brunelleschi and Alberti—had finished their work and passed away nearly a century and a half before, and in Italy itself the early work of these men and their immediate followers, with its small and delicate detail, flat pilasters, and frequent enrichments, had been superseded by the larger, more truly Roman manner of Bramante, Vignola, and Palladio.



FIG. 19.—HATTON HOUSE, RATHO, MIDLOTHIANSHIRE.

The earlier development it was that went to the making of the François Premier style, and through it, though at so long an interval both of time and sentiment, that influenced the Scottish rendering of the Renaissance when at last it became general. Meanwhile it was to Palladio and the original Roman work that in England Inigo Jones and Wren went for inspiration in their great and stately buildings of Whitehall, Greenwich, and the new St. Paul's. It thus came about that the position of architecture in this country was in the seventeenth century in many respects analogous to that occupied by it in the fifteenth. Momentous changes had intervened in politics and the arts; the Renaissance had displaced the Gothic style throughout Europe, the Union of the Crowns had brought Scotland more closely in touch with England, and furthermore removed it from France; yet, again, we find north of the Tweed and Solway an architecture, no longer ecclesiastical, but domestic and civic, entirely different from that prevailing south of the border-line, indigenous in character, but modified in detail under French influence, and, again, but more notably, with something of the Low Countries super-added.

Seen in the first half of the century in details only, such as the doorways and windows of Peffermill, Edinburgh, 1636, Argyle's Lodging, Stirling, between 1632 and 1640, and others, it spread before its close over the whole conception of the building in plan and mass, with results such as we see in Heriot's Hospital, or the old College of Glasgow, which were both erected after the mid-century was passed (and, be it noted, after the death of that pure stylist Inigo Jones), in Hatton House, Edinburgh, 1663-75 [fig. 19], and in Drumlanrig [*headpiece*, p. 233], the Duke of Buccleuch's noble seat by Thornhill, Dumfries-shire, 1676-89.

In these last two there is already evidence of an approach to the larger handling, the purer style of the English Renaissance masters, which in the North also became general in the following century, the consequent passing of the vernacular, and with it the final disappearance of the French accent; "the disuse of the 'Scottish toung' by the master masons as by the Court and nobility, and the desire to speak the King's English and growing shame of their Scotch."

While in these latter days, since the romantic revival of the national spirit by the genius of Sir Walter Scott, inspiration from the earlier indigenous style has been sought with success in much of domestic building north of the border; with this exception, from the eighteenth century to our own day the Scottish architect has followed pretty much the same tradition as his English brethren. Fortunately, as I venture to think, for the preservation of the national character, the "Scottish toung" is not easily got rid of; less so, perhaps, in architecture than in language, owing to the persistence of local material and methods of building under the stress of a more rigorous climate. National, and even more local character still reveal themselves in stone and lime, and that fortunately for the continued vitality of our art. Aberdeen, Edinburgh, and Glasgow each betrays to the observant eye a special physiognomy in its buildings, as in its inhabitants, but all three are distinguishable, and with the same difference, from Liverpool, Manchester, or London.



LINLITHGOW PALACE: N.E. CORNER OF COURTYARD.

CORRESPONDENCE.

The Grievances of Architects.

To the Editor, JOURNAL R.I.B.A.,—

DEAR SIR,—I venture to suggest that the coming election by the people of London, of those who are to represent them on the London County Council, should serve as an opportunity for the Metropolitan architects (and also those throughout the country) to review the present position of the Profession and of the Art and Science of Architecture in this country.

Intellectual work tends to monopolise the whole energy of those engaged in it, to the exclusion of more material matters which, nevertheless, are essential to the proper development of mind and of its power to put forth its best and maximum efforts. Consequently artists are prone to regard politics as being outside their sphere of influence and as a subject in which they have no concern, some even going so far as to think that it is improper to meddle therein.

Thus it comes about that those who desire to excel by intellect and studious development of the gifts which man shares with the gods, often fail to hold their proper place in Government, and find themselves in subjection to others who, having recognised the true nature of democratic Government, have cultivated the faculties which man has in common with the beasts that perish, and have utilised them and the cravings of nature to influence that irresponsible and ignorant part of public opinion denominated "the pendulum" to swing them into the throne of office. An election of representatives to any governing body therefore is an occasion on which the artist, as a leader of thought, should emerge from seclusion and incarnate the results of his thought in action.

Hardly a week passes without some communication reaching the Institute calling attention to the changes which are taking place in the position of those practising architecture. From these communications it appears that the work of designing buildings is slowly but surely being transformed from an occupation in which the individual is encouraged to put forth his utmost endeavour in the promotion of intellectual progress and advancement, to one in which he earns his daily bread as a mere unnamed cog in a drawing machine.

This substitution of the machine for the man is a notable tendency of the age, which in recent years has increased, and is now increasing, and which, in the best interests of mankind at large, ought to be diminished. It is the moral duty of the artist, and of the architect in particular, as the chief workman in one of the highest walks of life, to oppose this tendency. This is to some extent appreciated, but Bacon's question, "Is it not solecism to think to command the end and yet not endure the means?" is not answered, nor the advice it contains acted upon.

The means are in the hand of every citizen; but, to be effective, action must be taken. On the occasion of every election the artist must exercise his civic right and perform his moral duty in doing all that in him lies to instruct the would-be representative whom he supports, of the action the Governing Body is to take.

It is common knowledge that in the course of the next few years the London County Council contemplate expending some millions of public money in the design and construction of public buildings. The designs will probably be carried out entirely by a department of the Council, and, as far as can be seen from present arrangements, architects in private practice will have no opportunity of taking part in the work. This in itself is important, but the gravamen of the matter lies in the fact that it is characteristic of the course municipal bodies throughout the country seem more and more inclined to adopt.

It has been conclusively proved that the performance of executive work by an official whose duties are primarily and properly administrative is not for the general good. The qualities required for administration are entirely different from those essential to execution, and any attempt to combine the two functions tends to inefficiency in both. The "Executo-administrato" official more often than not, "like a man to double business bound, stands in pause, where he shall first begin, and both neglect."

The usurpation of the function of the executive designer by the permanent administrative official is a substantial grievance and an injury to the "advancement of Civil Architecture, and to those arts and sciences which it has been the practice of all enlightened nations to foster and encourage as tending greatly to promote the domestic convenience of citizens and the public improvement and embellishment of towns and cities."* Therefore it is the duty of every citizen to take such steps as he can to remove the grievance and abate the injury.

I submit for the consideration of architects that the existence of this state of affairs is to a very large extent their own fault. It is the direct consequence of neglect of their civic duties and of allowing their rights as citizens to rust unused. As leaders of thought in those matters which really concern the well-being of the nation they murmur often but seldom speak out at the proper time.

In this they do not stand alone. The deadly lethargy of the Upas Tree of Government by the Demagogue, deriving his mandate from the dregs of the population, is upon artists as upon the whole population of this country. It behoves every man who loves his country and his art, to use without flinching the lash, if need be of scorpions, to arouse men from this sleeping sickness.

* Charter William IV. to R.I.B.A., 1837.

In all countries in which the government is democratic and (whether Imperial or Domestic) carried on by Representatives of the people, each citizen has only himself to blame if he permits his representative to do acts which are contrary to the wishes of constituents or which are not for the common good. Every member of the State has a personal concern in its government, and is entitled, when candidates seek election to office or places of power, to demand from those candidates not only an expression of their views, but also a pledge that if elected they will carry out the wishes of those who place them in office—in other words, will act as constitutional Representatives, and not as despots.

Roughly speaking, there are about 7,000 practising architects in the United Kingdom, and there are in addition a very large number of persons engaged in the production of work incidental to architecture and required for improving the environment of the rising generation. At a low calculation every architect, as well as each of these producers of art work, is capable of influencing some 200 or 300 votes. If that influence were exercised as it is the duty of artists to exercise it, a political pressure could be brought to bear which neither municipal nor imperial representatives could disregard:—a leaven, comparatively small in quantity indeed, but of such a quality that it could and would affect the whole lump.

I venture to point out that a Representative Government yields to the pressure of public opinion and to nothing else. Neither registration nor any improvement in the present deplorable condition of many practitioners of architecture in this country can be expected or brought about as long as the individual fails to exert himself and to use those means for the improvement of his condition which he actually holds in his hand.

It is impossible for the Royal Institute to perform fully the functions for which it exists, as long as the individuals who compose it regard it rather as a receptacle in which to deposit complaints of well-known "grievances," instead of a great organisation in which each individual, although only an atom, forms a part and has a direct interest in and a double duty to perform towards it—to his fellow atoms and to art and progress.

If the Council and the Committees could but harden their hearts and decide more with their heads and less with their feelings, they would reply to fifty per cent. of the complaints reaching them as Hercules did to the Carter whose waggon was stuck in the mire, "Why sit and grumble? Put your own shoulder to the wheel if I am to help you."

An intelligent conformity to the laws of nature is a source, not of wrong to particular classes, but of happiness to all. The architect in asserting his right to be given the opportunity of practising his art is not claiming a favour to the injury of the rest of the community. He is utilising one means

of promoting general improvement and raising the general intelligence of his race. The influence of surroundings on the young is a well-known and accepted truth. Their educational value to a very great extent emanates from the architect and is created by his work.

Therefore by bringing pressure to bear on those whom he is about to elect to govern him, and to whom he proposes to give power to take a part of the reward of his labour and expend it for the general purposes of the community, the architect as far as his public duty is concerned is performing a real service to the nation.

By demanding named mind-work in place of unnamed machine-output he is doing his duty to his neighbour, and protesting against the deprivation of a large part, and that the most valuable part, of his reward for intellectual work.

To the extent that he presses for a fair opportunity of earning a reasonable return on his capital value as represented by time-sovereigns expended in forming him into an educated man, he is only acting upon that instinct inherent in every human being to take such steps as are necessary for that self-protection, which is the inalienable right of man.—I am, Sir, faithfully yours,

C. STANLEY PEACH [F.].

INTERNATIONAL TECHNICAL DICTIONARIES.

THE review of Vol. VIII. of the Deinhardt-Schlomann Technical Dictionaries in the last number of the JOURNAL suggests some thoughts on dictionaries which deal with foreign architectural technical words and their English equivalents, and especially on the best method of making the information they contain accessible.

In the Deinhardt-Schlomann dictionaries the method which has been adopted is to divide the page into three columns; in the centre one to give, wherever possible, a small sketch such as a wheelbarrow, a dome, a railway bridge, a steam-roller, and so on; in the left-hand column to give the names of these various things in German, English, and French; and in the right-hand column the names in Russian, Italian, and Spanish. Then follows an index of all the words previously mentioned, arranged alphabetically, but without any reference to differences of language except that Russian, which uses characters peculiar to itself, necessarily has a separate index.

To explain the way of using these dictionaries, let us suppose one wants to know the French for "attic." First, one turns to the index, and there, sandwiched between "Attendant of a pile driver," and "Attitudine di modellamento del calcestruzzo," one finds the word "Attic" and a reference, 129, 6. One then turns up this reference and finds a small drawing of a section through a roof,

and the information that the French equivalent of the English "Attic" is *Plancher (m.) de camble*.

In the compilation of the eleven volumes so far published of this series of dictionaries an immense amount of labour has been expended, and, undoubtedly, the information contained in them is very considerable; but whether that information is as easily accessible to English readers as it might be, is, I venture to think, very much open to question. I do not pretend that my knowledge of Foreign-English dictionaries which deal with architectural technical words is specially extensive, but, as far as it goes, it appears to me that a fault common to many of them is that they attempt too much, and in the Deinhardt-Schlomann series that fault is particularly noticeable.

When, in the course of reading some book on architecture written in French, one meets with an unfamiliar technical word or expression, what one needs is a dictionary where the English equivalent of this word or expression can be found at once and without difficulty; therefore, for the English architect reading French, the ideal dictionary would confine itself solely to French technical architectural words and phrases with their English equivalents, and would have no concern whatever with any other languages, nor with words used in any other arts or trades. Similarly, for the English architect reading German, the ideal dictionary would confine itself solely to German technical architectural words and phrases with their English equivalents, and with nothing else; and so on for other languages.

For the most part, however, compilers of dictionaries do not appear to realise this. They seem to think that if it is necessary for us to look up a French technical word, we shall not be satisfied simply with its meaning in English, but that we must be told as well what it is in German, and Russian, and Italian, and Spanish, as in the Deinhardt-Schlomann dictionaries; or else, if they reduce the number of languages, they more or less hide the purely architectural words and meanings among a mass of words and meanings belonging to all sorts of arts and sciences and trades and businesses.

Let me give an example. Suppose one should wish to know what Viollet-le-Duc meant by *appareil* when he wrote "l'examen de l'appareil conduit souvent à reconnaître l'âge d'une construction," and should consult Tolhausen's Dictionary. There he will find five closely printed columns containing, if I have counted correctly, no less than one hundred and one different entries devoted to English meanings of this one word, alone and in various combinations, beginning with "Appareil" meaning "Apparatus," and ending with "Appareil de Woulf," meaning Woulf's apparatus; and somewhere in these five columns and among these hundred and one different entries the particular meaning he is in search of is

doubtless buried; but why should he be called upon to disinter it from such a mass of, to him, totally useless information?

While, however, some dictionaries make the mistake of giving us considerably more than we want, others fail by not giving us as much as they ought. Of this also I will give an illustration. In a description of Mont St. Michel I read "De cette porte on monte aux chemins de ronde par un escalier." Now suppose I am not quite sure of the meaning of the expression "Chemin de ronde," and I consult Berty's "Vocabulaire Archéologique," there I shall find that the English equivalent is "*alura*." This, no doubt, is exactly correct, although I believe the more usual spelling is *alure*, and not *alura*; but then the question arises: What is an *alure*? And I venture to think that it is not everyone who could give off-hand the correct answer. In such a case as this I think a few words of description might well be added.

Of course it might be objected that the addition of occasional descriptive definitions would add considerably to the bulk of the dictionary, but this might be balanced to some extent by the omission of all unnecessary words. For instance, in Mothes' Dictionary we are informed that the English equivalents for the French "Aile" are *aile*, *aisle*, *isle*, and *ile*, and for "Beffroi" *belfry*, *belfrey*, *befrey*, *baufrey*, *berfry*, *keep-tower*, and *berfredus*. From these two entries alone eight words might be dropped not only without loss, but with advantage, and if all such unnecessary words were deleted many short descriptive definitions could be inserted without appreciably increasing the size of the dictionary.

A third fault found in many Foreign-English technical dictionaries still remains to be noticed, and that is the strange, and sometimes un-English words and expressions often to be found in the English parts. If necessary I could give many examples, but two or three will be sufficient to explain my meaning. "Arbalète à liernes": *Main couple of a purlin poop*. "Chapiteau galbé": *The row-hewn capital*. "Chapiteau à crochets": *Capital with crumbled leaves*. "Abouter": *To prolongate a piece of timber, to eke*. "Blocailles": *Expletives*. Such things, no doubt, are amusing, but one does not consult a technical dictionary for amusement but for precise information, and that information, as I have said before, ought to be easily and immediately accessible.

Having now pointed out what I conceive to be the three principal faults in such Foreign-English technical dictionaries as I am acquainted with, I will offer, in conclusion, the following suggestions as a means of remedying them: Firstly, that only one foreign language should be dealt with at a time; secondly, that the dictionary should confine itself solely to words and expressions relating to architecture; thirdly, that short descriptive definitions should be added where necessary; and lastly, that

the dictionary, if not compiled, should at least be very carefully revised, by English architects thoroughly familiar with the technicalities of their profession.

Birmingham.

BENJAMIN WALKER [A.].

THE LATE W. G. B. LEWIS [F.].

A Reminiscence.

FEW of us whose recollection carries us back to the office of the late Mr. Wm. Burges, can fail to hold in remembrance one who for several years worked as a member of the staff at 15 Buckingham Street: William George Blackmore Lewis. It was in Burges's office, in the spring of 1874, that Lewis and I first met. By rights he should have got in there before me, but as things fell out I forestalled him by a week.

It happened that two or three extra draughtsmen were being engaged, expressly for the preparation of an extensive set of working-drawings for a college in America, and one more drawing-board only remained to be manned when I was admitted to my initial interview with Mr. Burges and invited to show my little job-lot of drawings, made during the previous three years of pupilage. But, it seemed, there was another man who was really expected to call, having been promised an interview, so I set about tying-up my portfolio, and was just turning to go, consoling myself as well as I could with an assurance given that I might hear further, when word came that I could begin work "on Monday." The other man, whose name turned out to be Lewis, walked into the office to begin work on the next Monday following. Somehow or other a site was found for his drawing-board near to mine, and we came to be reckoned as contemporaries. Presently, on some changes being made, others joined us—W. F. Unsworth among them, the first man I ever met from an office I was myself destined to enter a year later, Mr. Street's. Of Mr. Burges's friends who looked in to see the work in progress one of the most notable was E. W. Godwin, whose judicious criticism of the design set one thinking.

The work we were employed on lasted some six months, and then, as fully expected, our little company broke up. Under such a manager as John Starling Chapple we had learnt what it was to work while we were at it, and to work together; unnecessary talking in the office was put down, and equally close notice was taken of the minute for our leaving and the minute of our arriving each day. No distinctions were made of grade amongst us, each labourer being accounted worthy of the same hire was paid for his work precisely the same number of shillings per week—luckily for me, for I was probably the youngest there.

The set of college drawings being finished, those of us who had been taken on for their preparation

duly received our leave of absence together—all but one, and that one was Lewis. In our hearts we others knew why this was, though we affected some surprise. We were put off with the pleasant intimation that Lewis was retained "for politeness"! We knew that he had been found out, found too good a man all round to part with lightly, a man who had proved himself one of that comparatively rare species, the architect's assistant on whom an architect can really depend. We had been assayed, and the purer metal remained.

The qualities by which Lewis had been distinguished above the rest of us in that office—such qualities as thoroughness, precision, tenacity of purpose, self-reliance, and the power of making well-sustained effort, distinguished him throughout. I appeal confidently to all who remember him to bear me out in this assertion. An illustrative instance occurs to me, in connection with which it was my privilege, in after years, to be reminded of these particular qualities in my friend. We had undertaken to make a survey together of a certain property, some twelve acres in extent, comprising engineering shops and offices, yards, stabling and meadow-land bordered by a winding river; some old boundaries also were to be defined, although for long buried deeply under made-ground. We had to do the work during the months of January and February; snow fell on more than one day while we were at it, and Lewis insisted on our reading dimensions, on the foot-chain, to half an inch. Of course he did the drawing-out to scale; the thing had to be right.

Now, in the same inclement season, comes the sad tidings that my old friend, while surveying down in the country last month, contracted congestion of the lungs, which led to heart failure on the 4th inst.

10th Feb. 1913.

WALTER MILLARD [A.].

William George Blackmore Lewis was articled to John M. K. Hahn, serving the latter part of his time in the office of Edmund Woodthorpe [F.], Mr. Hahn's brother-in-law. From 1874–80 he was assistant in the office of William Burges, A.R.A., from 1880–82 in the office of Alfred Waterhouse, R.A., and was afterwards for several years chief assistant to Mr. Frank Baggallay [F.]. In 1878 he won the Grissell Gold Medal for drawings illustrating his ideas for the Design and Construction of two bays of a Groined Cloister, date thirteenth century. In 1882 he was awarded the Royal Academy English Travelling Studentship in Architecture. He was for several years editor of the *A.A. Sketch-book* and instructor in the A.A. Studio. The Institute is indebted to him for some of the motto head-pieces still occasionally used in the *JOURNAL*, and he contributed sundry illustrations of helmets, mail, &c., to the *Archæological Journal*. He started in independent practice in 1886, and was elected Fellow of the Institute in 1906.

REVIEWS.

SHROPSHIRE CHURCHES.

An Architectural Account of the Churches of Shropshire. Part 10. By the Rev. D. H. S. Cranage, M.A., F.S.A. Illustrated with permanent plates from photographs by Martin J. Harding. With ground plans by W. Arthur Webb [A.]. 40. 1912. [Hobson & Co., Wellington, Shropshire.]

This final instalment of Mr. Cranage's comprehensive work contains much that is interesting and valuable, and brings the second volume to a conclusion with the section on the Liberties of Shrewsbury and an Appendix of considerable importance, besides an illuminating General Survey and a Retrospect, in which the author refers to his chief sources of information and acknowledges help he has received from various persons during his eighteen years' fruitful labour. These, with a very full index, bring to its close a work that will be increasingly useful as time goes on.

The fact that all the churches, both old and new, are described, with a full account of the various features of each, gives a completeness that is satisfying, and will make Mr. Cranage's book a standard work of reference, that students may turn to without disappointment. The clear distinction made between old work and that which is more recent will, in time to come, be most valuable, especially as regards those churches which have been restored with a precise archaeological correctness. In former times each church told its own tale, for every alteration and extension bore the stamp of the period when it was made, and one could trace the evolution of its history from an examination of the fabric; but this is not so now that our architects are imbued with a more academic spirit, and sometimes make their work of restoration so exactly like what has been done before, that a spurious antique is produced, which the weathering of time makes indistinguishable from a genuine relic of the ancient days. This consideration will make the value of Mr. Cranage's analyses readily apparent, and we foresee that, as the years progress, references to them will be more frequent and they will have a growing utility.

Mr. Cranage rather apologises for illustrating St. Chad's (new) Church, because it is a classical building erected as late as about 1790. This seems to us to be needless, and we think a ground plan also might have been given. It is very unusual and is laid down on grand lines. In Plate cxi. we see how happily, and with what dignified effect, the classical style of architecture can be adapted to ecclesiastical purposes. It is not always realised what an excellent foil classical fittings are to the Gothic; the full descriptions of those given in Mr. Cranage's work show that he has a proper appreciation of such matters. The chapter on St. Mary's, Shrewsbury, is a model of its kind, and the reasoned working-out of the several dates is quite convincing.

We are not in love with the fanciful initial letters, and the general get-up of the book lacks artistic perception. This may be due to the conditions of publication, and possibly Mr. Cranage would improve on it if he were now beginning to publish. However, the extension over a long period of the issue of a work of this character has definite advantages, as is shown by the long Appendix, which is largely devoted to additional matter that has come to light since the earlier parts were written, and the amplification of details connected with the various churches already described in their proper sequence. The General Survey is an admirable summary of the whole subject, not the least interesting part being the unprejudiced review of works done since the Gothic Revival. The value of the tabulated list of fittings and church furniture can hardly be over-estimated, while a stimulus to the fascinating study of the so-called "Low Side Window" is given by the complete list and full description of every example in Shropshire.

Grateful recognition is also due to Mr. W. Arthur Webb, whose carefully drawn plans help us to a more complete understanding of Mr. Cranage's descriptions, which are made thoroughly clear and explicit by these admirable illustrations. We would, however, point out that the joints of construction are insufficiently shown in certain sectional details that are given, as in fig. 76. The same remark applies to fig. 74.

The reading of this exhaustive study of the architectural history of Shropshire churches must be a rare pleasure to any one with antiquarian sympathies, and Mr. Cranage is to be congratulated on the completion of a monumental work which is not likely to be superseded.

Leicester.

S. PERKINS PICK [F.].

GOTHIC ARCHITECTURE AT OXFORD.

The Story of Architecture in Oxford Stone. By E. H. Greening Lamborn. 80. Lond. 1912. 3s. 6d. net. [Henry Frowde, Amen Corner, E.C.]

It is only within recent years that students of Gothic art have been able to free themselves from the influence of the Ruskin-Rickman school, and to look at the art not as an agglomeration of interesting details, but to take a comprehensive view of the steady evolution of the style, to overcome the natural appeal of the craftsman's handiwork, and consider the large problems of construction which faced the builders of the Middle Ages.

The book under review, though inevitably something of a *réchauffé*, makes a worthy attempt to set forth the progressive theme of evolution in the art, due to these large problems. It sets out, indeed, to consider the whole history of development in architecture from earliest times with illustrations from Oxford, but it really develops into an analysis of "a new system, the last and noblest, Gothic architecture."

After a short introduction, the author proceeds

to sketch the development of architectural construction through the trabeated forms to the introduction of the arch. This leads to the consideration of arcuated Romanesque building, and thus to the final examination of Gothic design.

The author shows in a very clear way the progress of Gothic problems of construction, and the scientific manner in which those constructive solutions were beautified, and he has grasped the fact that Gothic architectural problems were primarily structural and economic, and secondarily artistic; that the great need for economy in construction forced the art of the builders to take a second place, so that "the artistic beauties of the style belong to its early stages, its architectural triumphs to its later years."

The history of general development is followed by a well-written "Conclusion," a public-spirited appeal to the layman to take architecture seriously, and a healthy attack on the plagiarism and the untruth of the modern builder.

The second and larger part of the book is occupied by an excellent study of the elements of Gothic construction and ornament, under the title "A Grammar of Architecture." The chapters on the "Window" and the "Roof," showing the development of these features from their early beginnings, are especially noteworthy. There is also a short and interesting chapter on "Armory in Architecture," a useful branch of knowledge in a study of Gothic work, and one in which the author is evidently well versed.

Little mention is made of the Gothic timber-roof so well developed in English work, this feature being regarded in the book rather in the light of a makeshift.

But slight allusion is made to Renaissance building, partly owing, no doubt, to the overwhelming quantity of good mediæval work in the city, but more probably to the author's evident affection for the "glorious Gothic style." Upholders of the Georgian cult and the neo-Grec mania will scarcely agree with Mr. Lamborn's contention that "now, after three centuries of arrogant and ugly buildings, we are beginning again where the Elizabethans left off." On the other hand, his somewhat rigid ideas on the subject of beauty as exemplified by sane construction are healthy, though one rather regrets his distaste for flamboyant tracery, so beautifully and suitably developed in France.

The author's occasional light touches of humour make the reading of the book a pleasure. He seems to take a delight in exploding fanciful theories. On much of the belief in symbolism in Gothic architecture he casts grave doubt; that the carved oak leaves, for instance, on St. Frideswide's shrine were intended to suggest her sojourn among the acorn-eating pigs he considers as purely a myth, and of course he holds that the sixteenth-century

E-shaped plan bears no compliment to the "Virgin Queen."

A short account of the local materials such as the Headington limestone would have proved useful to the architect, but the book will appeal more readily to the amateur. It should, nevertheless, be valuable to any one intending to study the buildings of Oxford, and if ever a faculty of architecture becomes an accomplished fact at Oxford University—it should surely be hoped that it will—this work will form a most useful handbook for the undergraduate, being conceived on good lines and amply illustrated.

W. J. ROBERTS, M.A. [A.].

CLIENT AND ARCHITECT.

Keystones of Building. By F. Inigo Thomas. Sm. 8o. Lond. 1912. 2s. 6d. net. [John Lane.]

The title of this little book may at first sight seem misleading, in that it is concerned not so much with the practical details of building, as with the relations between client and architect, and the difficulties of the same. The book is addressed to the client, and in a very clear fashion takes him, or her, as the case may be, through the various stages of a building operation. If it gains that measure of attention to which it is entitled, and if clients will act according to its precepts, then will the task of many an architect be simplified—and there is no better keystone of building than sympathy between the two. It is hardly necessary in the JOURNAL to note the side of the book concerned with the various stages of a building operation. That difficulties exist must be admitted, and it can hardly be otherwise in a profession that is so "open" as to comprise within its members men who proudly proclaim themselves artists, and distinctly superior ones at that; other gentlemen, who pursue the lucrative calling of the expert witness with a distinct leaning to surveying and dilapidations; and a certain underworld who combine money-lending with building. It would appear that before it can be expected that the client will unhesitatingly accept his architect's opinion with the same docility, shall it be said, that he accords to his lawyer's or doctor's, that a line must be drawn between quack and professional, and assurance given of a certain minimum standard of qualification. When the client can safely depend on the same average of efficiency in the architect that he now obtains from the doctor, difficulties will be less heard of. At the moment he meets the architect who is in reality an artist rubbing shoulders with another who is not. Small wonder that he is confused and should sometimes mete out to the artist the treatment that is the due of the other. Mr. Thomas's book will help matters forward if it leads to a clearer appreciation of the differences between the two types.

C. H. B. QUENNEL [F.].

INDIAN ANCIENT MONUMENTS.

Archaeological Survey of India.—Annual Report 1907-8. La. 40. 1911. Price 37s. 6d. [Calcutta: Superintendent Government Press.]

This report is presented in a handsome imperial quarto. volume of 360 pages, illustrated by 86 photographs and 267 text illustrations. The actual cost of the survey (assuming the rupee to be equal to 1s. 4d. in value) is as follows:

Value of work done	£25,782
Cost of establishments	13,451
Cost of the Report	437
Total cost	£39,670

It seems that a good deal of actual work was performed by the Public Works Department, and presumably the cost of work so executed is included in the above-quoted figures.

The text is fully explanatory, and the work generally seems to have been well and conscientiously performed. The coloured plate (page 29) is to my thinking an unnecessary expense. The arabesque is not good of its kind, and the colour too fragmentary to produce anything but a dirty effect, and there are no lines of section to indicate the parts in relief. Nearly half the scales on the drawings have the zero misplaced, an error by no means confined to Indian drawings, but inexcusable on drawings prepared under skilled supervision.

Although it is difficult to draw a line between conservation and restoration, it is gratifying to note that less money is being spent on the latter. The Director-General believes himself to be in unity with the expressed views of the Society for the Preservation of Ancient Monuments; but so long as neither this Society nor the Director draws a distinction between stone buildings and brick buildings plastered, this unity may be open to question. In my opinion no building plastered can be considered "monumental," for the simple reason that the plaster now seen is very seldom that originally applied. The Society's notes apply to stone buildings, but most of the buildings in Beejapure, including the Gol gombes, are plastered. The later works in Hampi, Golconda, Secunderabad, Madura, Trichinopoly, and elsewhere are also plastered, and it is folly to spend money on them unless they can be used as offices.

R. F. CHISHOLM [R.F.].

New Books.

Problems in Periclean Buildings. By G. W. Elderkin, Ph.D., Preceptor in Art and Archaeology, Princeton University. 40. Princeton and Lond. 1912. 7s. 6d. net. [Henry Frowde, Oxford University Press.]

Centula. St. Riquier. Eine Untersuchung zur Geschichte der Kirchlichen Baukunst in der Karolingerzeit. Von Wilhelm Eßmann. 80. Münster in Westf. 1912. 6 marks. [Aschendorfsche Verlagsbuchhdlg., Münster in Westf.]

Erratum.—In the review of Shuffrey & Davies' *English Fireplaces* (Batsford) in the last number of the JOURNAL, the price should have been quoted as Two Guinea net, not One Guinea.



9 CONDUIT STREET, LONDON, W., 22nd February 1913.

CHRONICLE.

The Meeting of the 3rd February.

The Papers on Modern Hospitals, read by Messrs. A. Saxon Snell [F.] and Wm. Milburn, jun. [A.], at the Institute last Monday, attracted a numerous audience, several well-known medical men connected with hospitals being among the visitors. The customary two hours proved all too short for the exceedingly full papers and the extensive series of illustrations prepared for the occasion, and as the evening drew on and an interesting discussion was in prospect, Mr. Milburn did not attempt to read his Paper but devoted himself entirely to an explanation of his illustrations. Altogether from eighty to a hundred slides were shown, illustrating plans and views of the most notable modern hospital buildings in England, France, Germany, Canada, and the United States. It is proposed to publish a considerable number of plans with the Papers in the JOURNAL, and as the preparation of the blocks will take some time, publication has had to be postponed to the next issue. The discussion, which was contributed to by Mr. Edwin T. Hall [F.], Dr. Boobyer, Medical Officer of Nottingham, and Mr. Stanley Boyd, Senior Surgeon at Charing Cross Hospital, will appear as usual at the end of the Papers.

Ghent International Exhibition: Notice to Exhibitors.

We are requested by the Belgian Legation in London to announce, for the information of architects who have been invited to exhibit at the International Exhibition shortly to be opened at Ghent, that the works will be collected in the warehouses of Messrs. James Bourlet et fils, of 17 and 18 Nassau Street, W., from the 1st to the 10th March, with a view to their being despatched all together to Belgium. Exhibits must take the form of drawings on strainers and framed photographs. The cost of packing and carriage to and from the Exhibition, together with insurance against risk *en route*, will be defrayed by the Exhibition Committee. The Committee, however, will not be responsible for the insurance of works during the time they are on exhibition at Ghent.

R.I.B.A. Prizes and Studentships 1913: The Essays: Further Awards.

Acting on the recommendation of the Essays sub-committee of the Prizes and Studentships Committee the Council have awarded Certificates of Honourable Mention to the following competitors for the Royal Institute Silver Medal:—

MARTIN SHAW BRIGGS [A.] for an Essay on "Baroque Architecture," submitted under the motto "Chi non sa far stupir vada alla striglia."

JOHN HUBERT WORTHINGTON, M.A. [A.], for an Essay on "Baldassare Peruzzi di Siena," submitted under the motto "Anti-Baroque."

FREDERICK THORP, M.A., for an Essay on "The Timber Style," submitted under the motto "Durmast."

The Free Practice of Architecture in Scotland.

The following Memorial, drawn up by the Glasgow Institute of Architects in concert with the other Allied Societies in Scotland, was addressed last December to all the Scottish Members of Parliament, calling attention to what the memorialists consider to be a public injury and a serious interference with the free practice of architecture in Scotland. It is satisfactory to note that the Government has since seen fit to change its plans and to arrange for throwing open to competition the designs for the new Government Offices in Edinburgh:—

SIR,—We desire to call your attention, as the Parliamentary representative of a constituency within our provinces under the Royal Institute of British Architects, to what we consider to be at once a public injury and a serious interference with the free practice of architecture in Scotland, in the placing by the Government of the design of its building work in Scotland with H.M. Office of Public Works in Edinburgh, instead of, where possible, employing the services of outside architects.

For years this practice has been on the increase, until now the amount of work controlled by the Office is much more than can be handled with good results by its chief architect, with the result that a large proportion of it has to be delegated to irresponsible assistants, while the opportunities of private architects are correspondingly diminished.

We are not without appreciation of the great ability shown by the present holder of the office in question, but altogether apart from the question of individual skill, we are strongly of opinion that the employment of an outside architect for all but routine work is to be preferred in the public interest for the following reasons among others:—

1. All experience of departmental work of this nature shows the oncost in relation to the value of work executed to be greater, where everything is accounted for, than where done by outside men. From figures put before us we have reason to believe that in the case of Government offices doing architectural work, such oncost is considerably in excess in this respect.

2. The lack of personal responsibility on the part of the designer when an official tends to indulgence on his part in extravagance in design and finish, and this is accentuated when his experience has been confined to the work of a public office where personal interest is not closely involved in controlling expenditure. On the other hand, an independent architect, being freed from inside influences and accustomed to be held personally

responsible for ultimate cost, is in a much better position to look after his clients' interests in that respect.

3. When an official architect is employed there is no second opinion as to the quality of his work. On the other hand, when an outside architect is employed, the Government still have the benefit of the advice and criticism of their official upon the work produced.

We have also to complain of the manifest injustice and hardship involved to the general body of Scottish architects who, through taxation, are under the necessity of contributing to the upkeep of a Department which occupies the position of a favoured competitor.

We address you especially at this time as we have reason to believe that, in addition to the large amount of work with which the Department is already burdened, the Government now contemplates handing over to it the important buildings to be erected on the site of the Calton Jail in Edinburgh, and we beg that you will use your influence to the end that this policy may not be adopted, but that instead, and on the above-mentioned grounds, arrangements may be made for placing this work with outside architects, preferably by competition.

In making the foregoing suggestions, it might be pointed out that the system advocated has already been adopted in England, the designing of many of the more important Government buildings recently erected having been placed in the hands of outside architects, amongst which might be quoted—the War Office, the Local Government Board Offices, the British Museum, the Admiralty Offices, &c.

What makes the profession regard this particular matter with more than ordinary anxiety is that the site to be dealt with is undoubtedly of unrivalled importance, the opportunity of treating such a site probably not having occurred in the history of Edinburgh, and the treatment of any building placed upon it will call for the very highest architectural skill, which, it is considered, might be most readily secured by obtaining the various ideas of the profession at large by such means as the organising of a public competition.—We are, &c.,

On behalf of the Edinburgh Architectural Association,
A. LORNE CAMPBELL [F.] President.
JAMES KERR, Hon. Secretary.

On behalf of the Glasgow Institute of Architects,
ALEXANDER N. PATERSON, A.R.S.A. [F.], Pres.
C. J. MACLEAN, Secretary.

On behalf of the Aberdeen Society of Architects,
ARTHUR CLYNE [F.] President.
A. H. L. MACKINNON [A.] Hon. Sec.

On behalf of the Dundee Institute of Architects,
C. P. K. YOUNG [A.] President.
WILLIAM SALMOND [Licentiate R.I.B.A.] Sec.

The Architecture of the New Delhi.

The question as to the architectural treatment of the new capital of India is well and soundly argued by Mr. H. Heathcote Statham [F.] in the current issue of the *Fortnightly*. Mr. Statham gets straight to the point with the question, "Are we to build as Englishmen or as Orientals?"—a question to which, he considers, there can be but one rational reply.

We in India (he says) are very much in the position of the Romans in the countries which they conquered and annexed; and what their practice was we know well enough. Wherever the Roman eagles went, there arose the Roman columnar temple and the Roman triumphal arch—alike at Nîmes, at Timgad, or at Baalbec. Similarly, wherever Mohammedan conquest went, its visible symbol

was the mosque in the Saracenic style; not quite so uniform as the Roman architecture in foreign lands, because the Mohammedan conquerors were more racially mixed and their type of architecture therefore not quite so distinctly defined; it took upon it something of the colour, so to speak, of the country into which it penetrated; it varied a little in Egypt, in Africa, in India, and in Spain; but the main type was always kept to. It is in the natural course of things that it should be so. A conquering nation, erecting buildings for its own use on a foreign soil, brings its own architecture with it; builds as it had been accustomed to build at home.

That was, of course, what we did in our earlier Government buildings in India; and—the critic on the other side may reply—wretched, dull, commonplace architecture it was. True; but at home it was equally so at that time. That reproach can hardly be brought against it now; not against the best of it, at all events. English architecture has advanced immensely during the last thirty years. We have been through our modern Gothic fever and got over the effects; and we seem now to have settled down towards a new phase of that form of architecture, so peculiarly suited to modern needs and modern life, which had its foundation in the Italian Renaissance, and which Fergusson not inaptly characterised as “the architecture of common sense”; we might add also, that it is emphatically the architecture of a cultivated society. The conclusion therefore would be, if there are important Government buildings to be erected at Delhi, build at Delhi as you would build in London, only—with due regard to the difference of climate. There is where the real opportunity comes in for something new in architectural design and detail. Plan, and forms of roofing, would have to be modified to meet the conditions of great heat. A bright sun would give occasion and excuse for a more delicate and refined treatment of detail, such as would be ineffective in the English climate; in fact, the Renaissance type of architecture is really more fitted to be effective under a bright sky than under a dull one. Local materials would afford new effects of texture and colour, and the presence of Oriental vegetation might very well suggest interesting and piquant variations in decorative detail, without destroying what ought to be the prevalent English character of the architecture. Such an architecture, distinguished also by that refined and carefully considered profiling of mouldings which is one of the great characteristics of a civilised architecture, and is hardly ever found in Oriental architecture, would be a far more suitable architectural expression of our position in India than could be produced by an arbitrary and self-conscious assumption of Orientalism.

Some Things to be done.

As an inducement to members to read the whole, a few extracts are appended from the admirable address entitled “Some Things to be done,” delivered by Professor Lethaby [F.] at the Architectural Association on the 10th inst. He said:—

I should think that the first thing for students to do is to get a clear idea of the educational courses now open to them in several schools; and, further, a view of the educational ladder provided by the scheme of essays in Design which are accepted as Testimonies of Study by the Institute, reaching up to the larger prizes and the scholarships tenable at the English School in Rome.

I can only here remark on two points. First, that the Institute Examinations provide for a diversity of gifts. In studies going beyond a necessary minimum students may concentrate according to their bent on facility in design, on scientific research, or on scholarship. The hope and intention is that by thus differentiating the course much higher attainment in one or

other branch will become common. What is required is not mere text-book science or scholarship, but a cultivation of some real gift until definite power is attained. The second point, and it is a small one, is to call the attention of students to the fact that the Institute Essay Medal is now given for independent essays and researches undertaken at the student's own will. But here again special original work is called for.

One need of the time—for if it is not done now it never can be—is to record so far as may be British building customs as they are still traditionally exercised: ways of stone-cutting as in East Yorkshire, where the masons dress a pretty herring-bone pattern on the face of their stones; ways of laying pantiles, of coating plaster ceilings with skim milk, and of putting tallow and salt into whitewash. Practical building wisdom of this sort should be gathered up and recorded. For this, I may point out, the country student has special advantages. Cob walling, the making of plaster floors, and “limeash” floors—are those arts still remembered? Even the folklore of building should be gathered up. In what parts of England, and why, do builders put a bush on the roof? If short notes on such subjects were sent to the Records Committee of the Royal Institute of British Architects I am sure that they would gladly collect them and from time to time print the results in the JOURNAL. A book of reference which seems to be badly needed is one on the building materials which are most characteristic of the several districts, with as many particulars as possible on local building traditions, and a few illustrations of typical examples. . . .

Another thing to be done, I would suggest, is to introduce a newer form of travelling studentship, or of travelling at one's own will. What is wanted is a free mind to observe and record valuable ideas in building and town life—the noting of pleasant ways of doing things. The ordering of museums, lighting of picture galleries, and the decoration of railway stations should be investigated. Observations should be made of the elegance of French construction in iron and steel, the German excellence in roofing and forms of external plastering, the direct and admirable Swiss way of putting lightning conductors to buildings, the general European decision as to the proper colour to paint constructive ironwork. All are worthy of imitation. Concrete bridges, cages elevated on tall lattice standards for gathering telegraph wires together in an orderly manner, even telegraph posts themselves painted in smart ways, are interesting. Ideas for the desired cheap cottage might be gained from the Swiss chalet, with its roof at a pitch of 120 degrees, containing no lost space and jutting far so as to keep the walls dry. In Switzerland, too, they have learnt how to lay cement pavements without their cracking, and much use is being made in cheap building of cement tiles not hideous in colour, also cement drain-pipes and troughs. . . .

. . . . We have to make a fine tradition of dealing with the most modern forms of construction in steel and concrete. . . . It must be admitted that, notwithstanding its virtues, concrete has certain special defects. Such, for instance, are poor surface and colour and the tendency to crack. The least cracking seems to destroy our pleasure in a fabric which should be continuous as a china vase. Again, concrete construction seems to call—I may be mistaken—for a large supply of commonest labour, a society of navvies organised by gangers. So far as this is necessarily the case concrete structures can never, I think—however high their functions may be or however perfect their forms—become a noble type of architecture. For I must repeat again and again, a fine architecture is not

a question of shapes, but of the quality of the effort that has gone into it over a long space of time. Every phase of art is, so to say, the logic of a principle.

Still, even if concrete construction does depend on essentially slave labour, we must do the best we can while continuing to use it.

As a starting-point it may be well to compare the special characteristics of concrete construction with those of masonry. The idea in masonry is the bringing together of squared blocks with sharply cut angles. The ideal is articulation and definition of form. For the most part mouldings, the mouldings which architects so liberally deal in, have little meaning beyond expressing the mason's delight in sharply cut forms truly laid. Carving also, except when some story is to be told, for the most part arises from the stone-cutting instinct.

Concrete, on the other hand, is built by continuous aggregation. It is a plastic material, and is unfitted to take sharp edges and delicate forms. We may perhaps conceive of concrete construction as a sort of colossal pottery. All architecture in the past has not been the architecture of cut masonry. In high antiquity, as now in many parts of the world, the current requirements of building were satisfied by erections of clay—first merely put together in the crudest way, and later by a preliminary division into sun-dried bricks. This clay building usually resulted in a type of construction in which the walls were gradually gathered over into coverings in the forms of rough arches and domes, and in which indeed we probably find the historical origin of the vault. The Roman builders carried this method, that is, a highly civilised version of it, forward to great and fine results. The Roman theory of building was to form the walls, vaults, and domes of a sort of built concrete—that is, a rubble of small stones so perfectly drowned in a good cement mortar that it set as a whole. A typical Roman building was thus all of a piece and continuous throughout. The walls and vaults so constructed were afterwards finished by the frank application of skins of other material, as plastering, sheeting with thin marble slabs, and many varieties of mosaic work. Where these methods of decoration have been used there has been a natural tendency to eliminate moulding and carving. In covering the vaults of a Byzantine church, for instance, with mosaic of gold and bright colours this beautiful material was painted as it were over the whole surface of the upper parts of the building from side to side and end to end: it was carried around the edges of arches by rounding the angles, and thus passed over them simply and easily. The Arab builders delighted to case their buildings with brilliantly coloured glazed tiles which covered the wall surfaces and even the domes. And here again is expressed the continuous nature of the body of a structure, which should, I feel, be characteristic of buildings in concrete. Consider again two leading types of furniture, examples of which come daily before our eyes—the joiner's type, which, however elaborate and delicate, depends on articulation of parts, and the highly developed cabinet-maker's art of veneered surfaces. I must point out here, as veneering has become somewhat of a byword and synonym for sham, that this was not at all its origin nor its essential meaning. Its proper office is to cover surfaces with beautifully arranged skins of precious material. There is no reason because we put a carpet over a floor to suppose that its whole substance is carpet, nor need we be distressed because our books are not solid leather. My point about veneered furniture is this—that an entirely different principle of design is brought into play in it than is fitting for what I have called the joiner's type. You may be sur-

prised in examining exquisitely finished satin-wood cabinets in our museums when you notice how simple their general forms are, and that they are almost wholly without mouldings. Thus the methods of structure everywhere modify external forms. That is the point I am trying to make just here. I am not recommending the veneering of concrete, but only pointing out that many types of structure have done without subdivision as much as possible and without mouldings altogether. These are the examples which we might best study so far as we depend on precedent. On the other hand, I think that the method of veneering with thin marble slabs, mosaic, or fine tile work might be frankly adopted occasionally.

I have said enough to show my general idea that concrete structures call for quite a different type of design than ordinary works of stone and brick. Cornices should be mere big rounds or coves, all angles should be rounded, any superadded decoration should be frank veneers and surface applications—platings of marble, bands of gold mosaic, panels of relief sculpture, rough-cast, sgraffito, glazed tiles, and terra-cotta might be appropriate. Big rounded forms seem suggested by this plastic material.

"Beaux-Arts" Courses in Britain.

Referring to Professor Simpson's letter in the last number of the JOURNAL (p. 210) respecting the "Beaux-Arts" Courses announced to be started in London, we quote below for the information of members some particulars of the scheme as given in a recently issued prospectus. The promoters, who are to be known as "The Beaux-Arts Committee to promote improved methods of Architectural Training in Britain," seek to establish in the British Isles ateliers of architecture similar to those connected with the Ecole des Beaux-Arts, Paris. The movement is under the patronage of the French "Société des Architectes diplômés par le Gouvernement," and the Committee of Management is constituted as follows:—

Lord Saye and Sele, Sir George Riddell (*Chairman*), Messrs. Alph. Defrasse (President S.A.D.G.), Jules Godefroi (Vice-President S.A.D.G.), Faure Dujarrie (Logiste et Diplômé), Chas. Mewès (Logiste et Diplômé), Arthur Davis, Eugène Bourdon (Diplômé), A. Templier (Diplômé), H. V. Lanchester [F.], Edwin L. Lutyens [F.], A. R. Jemmett [F.], E. C. P. Monson [F.], Percy B. Tubbs [F.], President of the Society of Architects, and R. Goulburn Lovell [A.] (*Hon. Secretary*).

The promoters disclaim any intention of supplanting existing educational establishments; their object, they state, is rather to supplement them. The first atelier has been opened in Wells Mews, Wells Street, W., under the direction of Messrs. Charles Mewès and Arthur Davis as Professors (or "Patrons"), and M. Chaurès as "Sous-Patron." To quote the prospectus:

The atelier will be conducted as far as possible on similar lines to those in Paris, and will enable architectural students in England to receive a like training in the principles of design. As the atelier will devote itself solely to the study of architectural composition, such other knowledge as is necessary to the practising architect must be acquired by the student from the sources already existing for the purpose.

The experiment is an interesting one, and its

progress will be followed with attention by all who are concerned in the training of young men for the profession of architecture in this country.

Safety and Workmanship : Reinforced Concrete Structures.

A note in *The Times* as to the danger to human life arising from lack of knowledge and skill in the construction of aeroplanes has drawn a letter from Mr. Alfred W. S. Cross [F.] (*Times Engineering Supplement*, 12th February), pointing out that the caution applies with equal force to other engineering experiments of our day.

For instance (urges Mr. Cross), precautionary measures should be adopted to govern the erection of a ferro-concrete structure the stability of which is dependent not only upon the strength of the skeleton framework and the skill shown in fitting and fixing its component parts, but upon an intimate knowledge of the mechanical properties of the metal reinforcement used.

With this object it is desirable to employ only skilled workmen who have received a sufficiently sound elementary training in structural steelwork to enable them to deal, in a comprehensive spirit, with the small but often important constructional difficulties that occur from time to time during the erection of ferro-concrete buildings of a complex nature. In this connection it is not suggested that the ordinary superintendence of the works by a competent foreman should be discontinued, but rather that no portion of the labour involved should be carried out in accordance with the individual judgment of an untrained man.

Referring to the growing need for the cultivation of conscientious workmanship and a higher standard of technical efficiency among British workers, Mr. Cross says :—

In addition, I would urge the supreme importance of educating the humblest worker in any craft or industry to an extent that will enable him to be interested in the general principles underlying the productive or other work upon which he may be engaged. Briefly, something more than the mere mechanical performance of his ordinary duties is now required from the workman. The general recognition of the science of engineering as a branch of university teaching has been of immense service in the development of specialised or advanced technological education suitable to the needs of professional men. Similarly, the demand for technical training made on behalf of those who aspire to the higher appointments in industrial life has been met by the erection of numerous well-equipped technical schools in all parts of the country. But, on the principle that the strength of a chain is that of its weakest link, it is equally necessary to deal with the varied educational requirements of the working man who may either be living at a remote distance from any teaching centre, or debarred by his lack of general education, from being able to profit by the course of instruction provided at the local technical institute. In either case individual tuition becomes a necessity.

The Admiralty Arch.

The Times announces that an appeal for the immediate completion of the Admiralty Arch has been signed by the editors of most of the London daily newspapers, morning and evening. The signatories state that they have been approached by large numbers of their readers, who are greatly concerned lest the opportunity which now offers of

opening up the new Admiralty Arch in a worthy and appropriate manner should be permanently lost. They believe that the loss of this opportunity would be regarded by the people of London, irrespective of party, as a deplorable error. Without suggesting how the present difficulties can be accommodated, they express themselves as satisfied that with good will and determination on the part of the authorities, and a display of civic spirit on the part of the Insurance company concerned, the Arch can be opened out in a manner worthy of the Victoria Memorial, which it completes, and of the site of which it forms a conspicuous feature.

The Owen Jones Student among the Moslems.

Mr. Robert F. Hodges [A.], of Craven Park, Harlesden, has kindly sent for publication a letter he has received from Mr. Wm. Harvey, winner of the Owen Jones Studentship this year, thinking the account of his experiences while pursuing his studies in the countries of the Moslem would be interesting to members. Mr. Harvey writes :

You may be interested to hear the history of my drawings. When I went abroad as travelling student from the R.A. Schools, I felt that the usual method of bringing home only fragmentary sketches left a good deal to be desired, so closed with an offer of the Byzantine Research Fund to make careful studies of work that would be useful to them and instructive to me, especially as the buildings they wished surveyed had never been accurately measured before, or, at any rate, proper plans had not been published. Of course, a lot has been written on all three subjects of my Owen Jones drawings (Hagia Sophia, Salonica ; the Church of the Nativity at Bethlehem ; and the Dome of the Rock at Jerusalem), but most former records were hopelessly at sea in detail owing to the immense difficulties involved in drawing in places so populous with fanatics. In Salonica I was once pitched neck and crop down the dark steep stairs of a minaret by an enraged Turk who suspected me of spying ; and in Bethlehem I was shoved head foremost through a big gutter outlet in an abnormally high parapet of the church aisle and obliged to creep down a ladder (luckily not too steep !) in the inverse order of things, with my head facing the ground ! In this case my assailant was a gigantic Greek sacristan who imagined that my measuring operations desecrated the fabric ! Of course, my pockets were crammed full of official permits in both cases, but their value was rather less than nothing ; especially in Bethlehem, for the priests there were in revolt against their Patriarch, who had given me permission to measure. Indeed, in a village near Bethlehem a priest was shot dead on venturing to remark that "the Patriarch isn't a bad sort." His body was brought to the church while I was there at work. Later in my stay the church was captured by storm (though without bloodshed) by peasants in favour of the Patriarch's party, who drove out the Bishop and his priests ! To get to the Dome of the Rock at all, a stranger has to be protected by a soldier, and even then is liable to be shot at sight by wandering beggars ! My work there lasted every day for six months, and many times my papers were seized by wild-looking fellows, and only given back after the old chiefs in charge of the place had spent a long time in argument and entreaty.

Of course, in such a case the victim can do nothing but sit still and look pleasant; and even supposing your soldier is at hand and not asleep, his sympathies would naturally be rather more inclined towards his countryman the saintly beggar than to a mere stranger from whom he only expects a meagre tip.

No one actually laid hands on me there, but one fanatic objected to my hat and removed it for me. (I had kept it on out of politeness after the chiefs had told me they preferred it that way.) Another, with an interest for my spiritual well being, informed me several times in a loud distinct voice that "Allah Wahed!" ("God is One!"), and only went away after I had assured him in Arabic that I entirely agreed with him. In fact, the only element of real discomfort, as it turned out, was in the daily exit, for the little Moslem boys were out of school by then, and improved their aim by shying at me with fragments of rock as I crossed the courtyard. They were decidedly the masters of the situation, for twenty youngsters cannot all be chased at once by a person loaded with rods and blocks and a camera, even if it were the best of policy to irritate the young ragamuffins. There was an element of comfort in the fact that the old chiefs were as much teased as I was. Naughty little boys would peep in at the East door, if it was open, and, seeing the exit clear through the one on the West, would skip in and patter across the Sacred Rock and out again in a twinkling, while the old men were unfolding themselves from a squatting position to get after them.

In a further letter, Mr. Harvey says:—

Yes, it is all Gospel truth, though only half the truth and the most amusing side of it. The other half deals with bad food and drink, excessive heat and cold, dirt, gloom, fatigue, and vermin, tired eyes and tedious diseases.

"The Builder" Editorship.

It is announced that Mr. Arthur Stratton [F.] having retired from the editorship of *The Builder*, the appointment has been accepted by Mr. Herbert W. Wills [F.]. Mr. Wills has had considerable experience abroad, serving for a time as assistant, first with Mr. Henry Vaughan of Boston, then with Messrs. Bruce Price and McKim, Mead, & White, of New York. He practised for a short time in Vancouver, British Columbia, and held a Government appointment in the Public Works Department of Hong Kong. He started practice in this country in 1892 in Swansea, South Wales, and was subsequently associated in partnership with Mr. John Anderson [A.], at 24 Bloomsbury Square, London. In conjunction with Mr. Anderson, Mr. Wills has carried out various important public buildings, many of them won in competition, and he has frequently acted as Assessor.

Carpenters' Hall Lectures, 1913.

These lectures, illustrated by lantern-slides, will be held on the following Thursdays at 8 p.m.:

Mar. 6.—Rev. Gerald S. Davies: "Old Charterhouse, London."

Mar. 13.—Mr. Henry B. Wheatley, F.S.A.: "Medieval Guild Life in London."

Mar. 27.—Mr. John B. Thorp: "A Sketch of Old London up to the Great Fire."

Apr. 3.—Sir Whitworth Wallis, F.S.A.: "Sicily—Ancient and Modern."

Apr. 10.—Rev. F. W. Macdonald: "Social Life in England towards the close of the Eighteenth Century."

Apr. 17.—Mr. Augustine Henry, F.L.S.: "The Choice of Trees for Profitable Planting."

Tickets may be had on application to the Clerk of the Company, Carpenters' Hall, London Wall, E.C.

Chinese Sculpture at the Victoria and Albert Museum.

The National Art-Collections Fund has presented to the Victoria and Albert Museum two Chinese marble statues of unusual importance. These are life-size figures of Korean mandarins in ceremonial dress, carrying a casket and a scroll (perhaps for insignia and a patent of nobility), on elaborately carved bases; they appear to have formed part of a series of memorial statues on each side of the road to a tomb in North China, and are probably by a sculptor of the Ming period. They are exhibited in the West Hall, to the left of the main entrance to the Museum.

COMPETITIONS.

Valley, Anglesey, Rural District Competition.

Gwyrfrai Rural District Competition.

The Competitions Committee request Members and Licentiates not to take part in the above competitions until a further announcement is made that the Conditions have been brought into conformity with the Institute "Regulations." The Committee also request competitors to return their copies of the Conditions immediately to the promoters.

MINUTES. VIII.

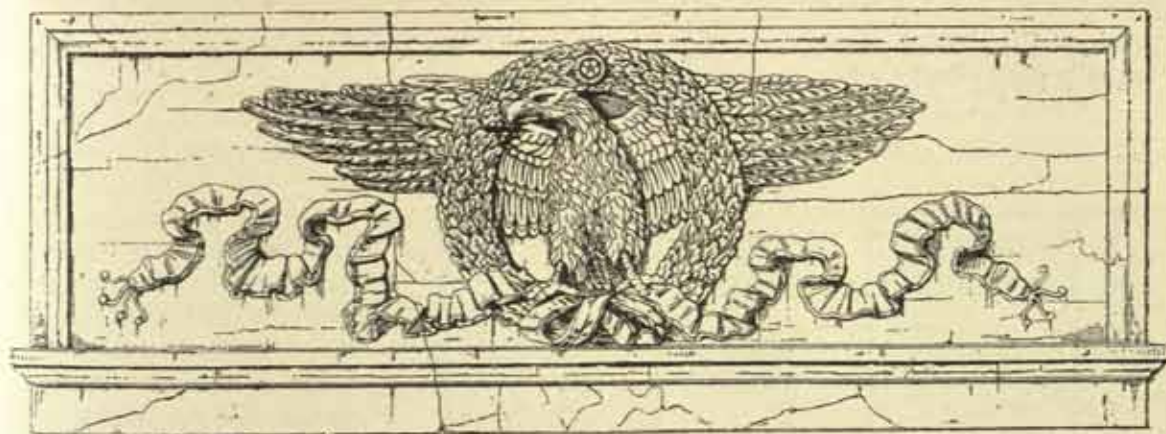
At the Eighth General Meeting (Ordinary) of the Session 1912-13, held Monday, 17th February 1913, at 8 p.m.—Present: Mr. Alfred W. S. Cross, M.A. Cantab., *Vice-President*, in the Chair; 25 Fellows (including 10 members of the Council), 33 Associates (including 2 members of the Council), 12 Licentiates, and numerous Students and visitors—the Minutes of the Meeting held 3rd February having been already published were taken as read and signed as correct.

Mr. George Hubbard, F.S.A., *Vice-President*, acting for the Hon. Secretary, announced the decease of Robert Falconer Macdonald, elected *Associate* 1889, *Fellow* 1899, and William George Blackmore Lewis, *Grissell Medallist* 1878, elected *Fellow* 1906.

The following Fellow and Licentiates, attending for the first time since their election, were formally admitted by the Chairman—viz.: Charles Ernest Elcock, *Fellow*; Herbert Samuel Taylor, John Thomas Saunders, Harry Philip Tufnell, *Licentiates*.

Papers on MODERN HOSPITALS having been read by Messrs. A. Saxon Snell [F.] and Wm. Milburn, jun. [A.], and illustrated by lantern slides, a discussion ensued, and on the motion of Mr. Edwin T. Hall [F.], seconded by Dr. P. Boobyer, a vote of thanks was passed to the authors by acclamation.

The proceedings closed at 10.20 p.m.



MODERN HOSPITALS.

By A. SAXON SNELL [F.], F.R.San.Inst.

Read before the Royal Institute of British Architects, Monday, 17th February 1913.

WHEN the Council honoured me with an invitation to read a Paper upon modern hospitals, in conjunction with Mr. Milburn,* I accepted it with pleasure, though it must be acknowledged it seemed difficult to divide the subject in a satisfactory manner. Mr. Milburn has elected to give you a brief description, illustrated by many plans, of hospitals erected within the last ten years; and as his work and studies are so well known, you will look with confidence for an interesting and instructive Paper. I may remind you of the excellent account he has already given of his studies of German hospitals.

The promoters of the newest hospital are generally anxious that it should embody the latest improvements and be just a little better than the last built. To this end there is much visiting of existing hospitals and study of plans and reports; and so it does happen that mistakes are noted for avoidance, and good features for adoption, or improvement maybe. Modern hospitals certainly show evidence of the thought and labour spent by medical men and architects in this way.

On the other hand, the study of mere forms is not so illuminating as that of the principles upon which they were based. Without a thorough grasp of principles we are liable to perpetuate the mistakes made by those who have preceded us.

It is with no great confidence in my own powers that I venture this evening to offer some more or less abstract observations upon the general arrangement and construction of hospital wards, with particular reference to principles which were enunciated as long ago as the early part of the nineteenth century, and which—so it seems to me—still await their fullest development.

The present and coming generations may learn with advantage the lessons taught by an array of brilliant thinkers and workers, as the result of experience gained in strenuous times when there were few text-books but much practical experience in situations and under circumstances which led them to recognise and rely upon Nature as the great healer. Miss Nightingale, De Chaumont, Galton, Morin, Husson, Tollet, Parkes, and even earlier authorities, may be studied to this day with advantage.

It takes a long time to translate principles into general practice, probably because we fail at first to grasp them thoroughly, or perhaps old practice dies hard. We pride ourselves upon the care with which in these days we avoid all mouldings and dust-collecting internal angles;

* See Mr. Milburn's Paper, p. 281.

and yet the general principle was stated by Miss Nightingale at least fifty years ago. Other equally good principles have been so far adopted in a tentative way only.

There is not much to choose in this respect between English hospitals and those in other

countries. We have concentrated upon sanitary fittings and what I may call local cleanliness. We also take great care in excluding soil-tainted air from wards. On the Continent better provision is made for space in and around the ward blocks. We have much to learn in this respect from France and Germany; and they from us, in the matter of sanitary fittings.

As an example of what may be done by inter-study, I would draw your attention to the new Rothschild Hospital, now nearing completion in Paris, and designed by my friend M. Bach-

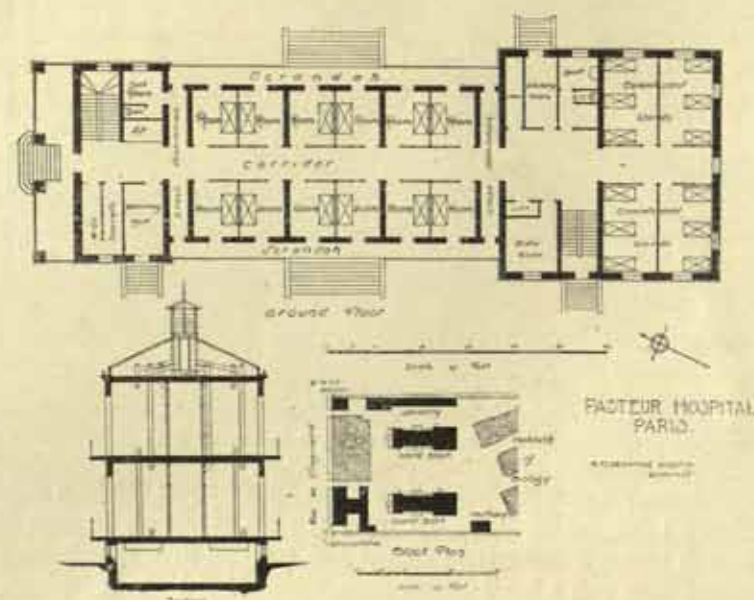


FIG. 1.—PASTEUR HOSPITAL, PARIS. (Architect, M. Florentine Martin.)

mann. He is a great admirer of many things English, and in this hospital has endeavoured to combine many of the best features in hospital planning and detail which obtain in both

countries. The building is of considerable interest. I know that he desired to adopt other English features, but custom dies as hard in France as it does here.

The modern type of hospital may be said to have taken its rise shortly after the Crimean War, and as the result of experience gained in that disastrous campaign. The pavilion type was adopted, and it holds the field to this day. Tollet says that this form of ward was suggested as far back as 1750.

The pre-pavilion type is extinct and no longer of interest except in an archaeological sense. Hospitals were mere collections of rooms, large and small, with little or no arrangement or plan specially adapted to the purposes of housing sick people. The administration offices and sanitary conveniences were all more or less in direct communication with the sick rooms. That is not to say they were badly planned for their day; but medical

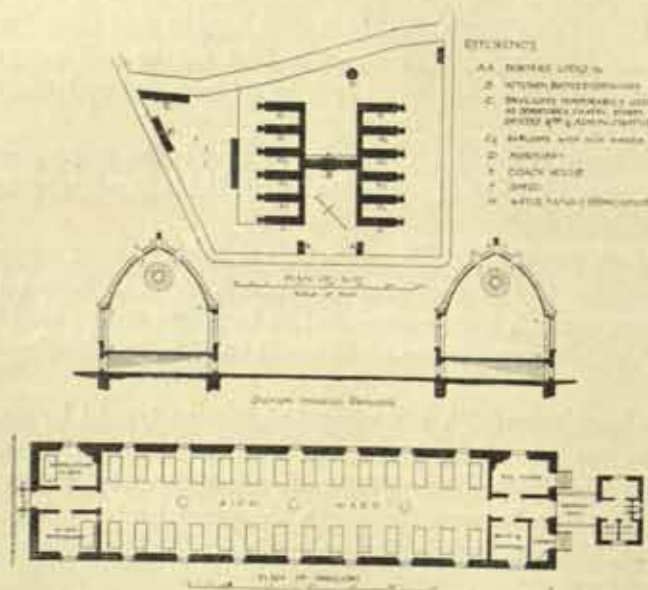


FIG. 2.—MILITARY HOSPITAL, BOURGES, FRANCE

science and the art of surgery were in an undeveloped state as compared with the present day, and the importance of environment for sick people was not then realised.

Two other great wars—the American Civil War and the Franco-German War—stimulated progress in hospital planning and construction, and, although medicine and surgery had advanced very greatly since the Crimean War, these later wars again brought out the advantages of fresh air in abundance, and the speedy removal of foul emanations from the neighbourhood of the sick. Once more the efficiency of isolated buildings widely spaced was made apparent, and we find this type of ward unit adopted in the great hospitals in Berlin, Hamburg, Montpellier, Bourges, &c. [figs. 5, 6, 8, 2].

It would seem that in periods of long-continued peace there is a tendency to go back upon the lessons learned in the strenuous times of war, and to modify planning in the interests of mere convenience and concentration. Then it is that we find virtues in high buildings—economy of ground and of construction, easier supervision, and a number of other desirable matters the effect of which is incidental only.

The extent to which concentration in buildings affects cost and convenience of administration, or even the initial cost of hospital buildings, is, however, more apparent than real. I shall have something to say upon this point further on.

Naturally during the last thirty years the advances in medicine and surgery, and more particularly in bacteriology, have had their effect upon the arrangement and construction of hospitals, though

not to so great an extent as at one time seemed possible. Bacteriology has not discounted the value of fresh air and sunlight; it has explained and emphasised it. Lister's antiseptic treatment led to a more complete realisation of the value of aseptic conditions in wards and sick rooms; and all parts are now designed so as to be easily kept clean. With solid walls and floors we have done away with innumerable dust-collecting and germ-breeding areas.

It is odd, by the way, that sash-framed windows have so long escaped general condemnation. Personally, I have discarded them altogether in favour of solid hard-wood or steel casements. Other forms are also being adopted. Sash windows, if required, can now be made entirely in metal.

The number and extent of administrative and other buildings not actually occupied or used

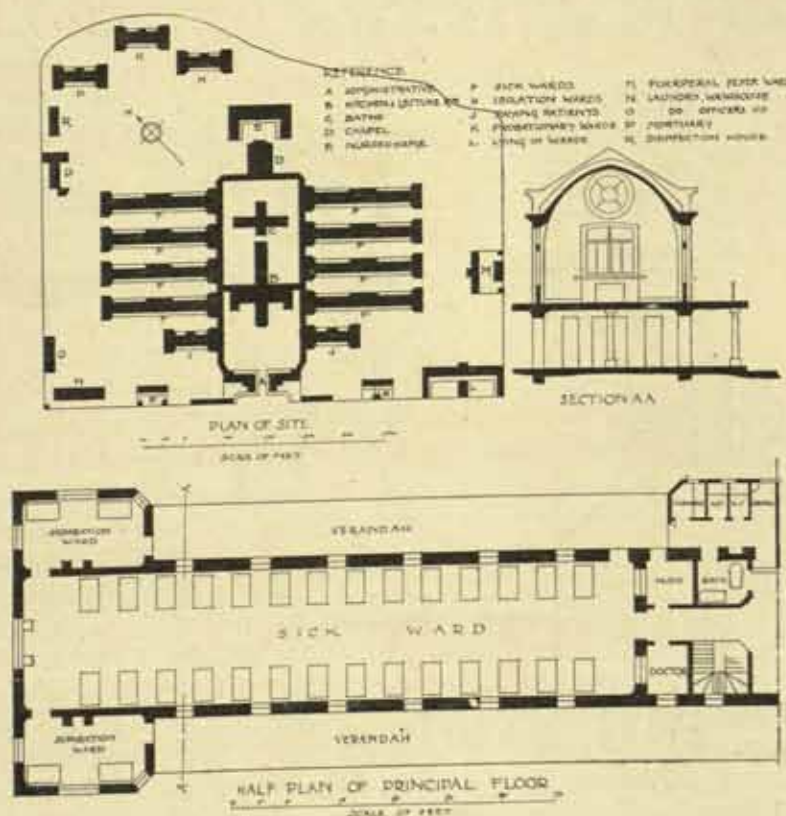


FIG. 3.—ST. ELOI HOSPITAL, MONTPELLIER.

by the patients have been largely increased in late years. We employ a large number of nurses, for whom more (and much better) accommodation is required. Engineering enters so much into the work and maintenance of a hospital that its buildings and equipment require much more room; and, what with baths, physical exercise halls, laboratories, and research rooms, the ward blocks tend to form a smaller proportion of the whole-institution than was the case in earlier buildings.

Two notable attempts in planning of ward blocks have been made within the last thirty years—one to substitute circular wards for pavilions, and the other to group all the wards together, as illustrated at the Belfast General Hospital. To these should be added the glass-cased cubicles of the Pasteur Hospital [fig. 1] for treating different infectious diseases under one roof.

The idea of circular wards is not without fascination, but it has been adopted in but few cases. The costliness of its construction—to say nothing of drawbacks in the way of supervision—is against its general adoption. It is useful in constricted sites, and in the peculiar configuration of some urban hospitals.

The Belfast type is unique, and likely to remain so. It was designed to fit a system of mechanical ventilation which has—I venture to think fortunately—failed, so far, to secure general approval for use in connection with hospitals.

In justice to those who conceived these types, we must acknowledge their boldness and originality. In failure—and many do not regard these attempts in that light—more honour

may be won than in the safer successes of the mere copyist. The Pasteur Hospital has been copied and improved upon in this country, but so far the system has not made any great way.

Fig. 17 shows an adaptation of the idea which I designed in connection with the King's College Hospital Competition.

Much, then, as the design and arrangement of modern hospitals has been affected by the advance of knowledge and practice, the importance of fresh air in abundance and the speedy removal of foul emanations from the neighbourhood of the sick is still fundamental. Light—and especially sunlight—is recognised as of scarcely less value. Add to these cleanliness in everything, from bedding to cooking utensils, and we have the main principles which form the basis of good hospital work.

Ventilation is but the means of keeping air fresh in enclosed spaces, heating a concession—and not always a wise one—to the debilitated forces of the sick and disorganised body; convenience of administration a question of economics.

A building—any building—is in itself an obstruction to light and air; but some means of shelter we must have against wind and rain and extremes of temperature. Subject to these limitations, the more air and sunlight we can get into our wards the better. Neither can be

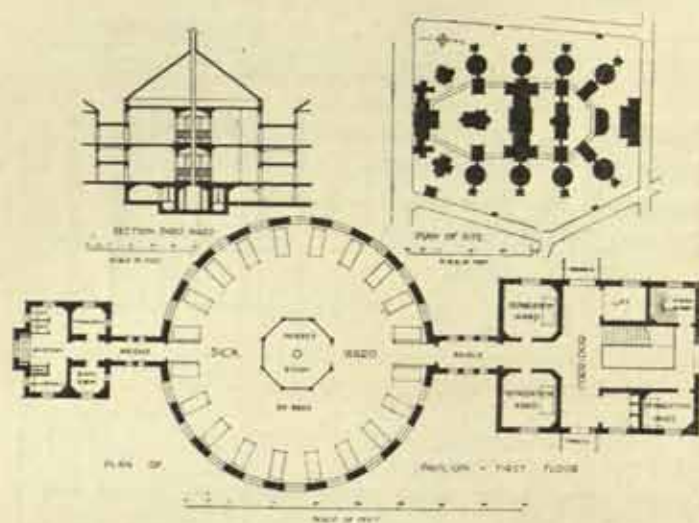


FIG. 4.—CIVIL HOSPITAL, ANTWERP.

obtained in the fullest degree without fairly large areas of land and wide spacing of ward blocks, so that air can move in large volumes around and, I may add, over and under the buildings with as little restriction as possible.

In this country we are niggardly in the area of hospital sites, for the obvious reason that land is costly, especially in and around cities, where large institutions are required. It is, indeed, too obvious to inspire complete confidence in its finality. I am inclined to think that what we may call ultimate cost is not reduced to any great extent by economy in the cost of the site, whilst the loss in light and air and means of efficient ventilation is real, if not at first sight very obvious.

Take, for instance, two of the latest and most magnificent hospitals erected within the last few years—Manchester Royal Infirmary [fig. 12] and King's College Hospital [fig. 13]; the latter is not yet finished. Both Mr. Edwin T. Hall and Mr. William Pite ardently desired, I am sure, a few more acres to give them better scope for the realisation of their ideas in hospital design; and none of us can help regretting that those who are responsible for the selection of those sites confined themselves to the minimum, and in the case of King's College less than the minimum area required.

This minimum was fixed many years ago to one acre to fifty patients; but I can scarcely believe that it contemplated room for all the additional buildings required for out-patients and medical schools. It was laid down at a time when the area occupied by administrative and other accessory buildings was very much less than that of the sick wards. At the present day the proportion has been considerably reduced, and, indeed, in the smaller hospitals the sick wards occupy the smaller space. I

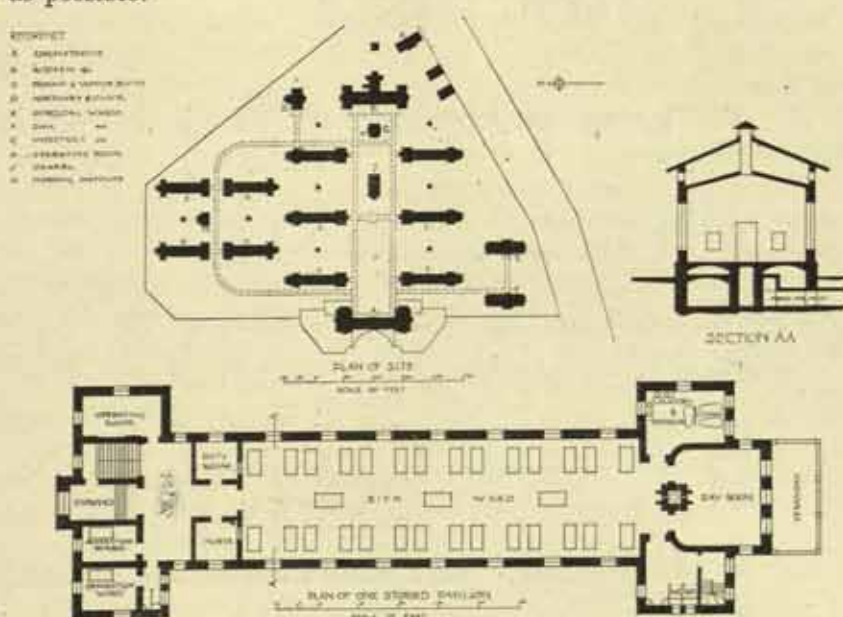


FIG. 5.—BERLIN GENERAL TOWN HOSPITAL.

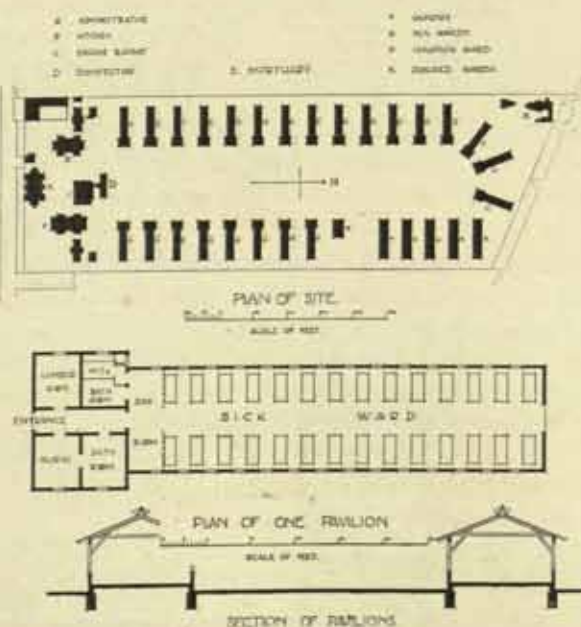


FIG. 6.—THE MOABIT HOSPITAL, BERLIN.

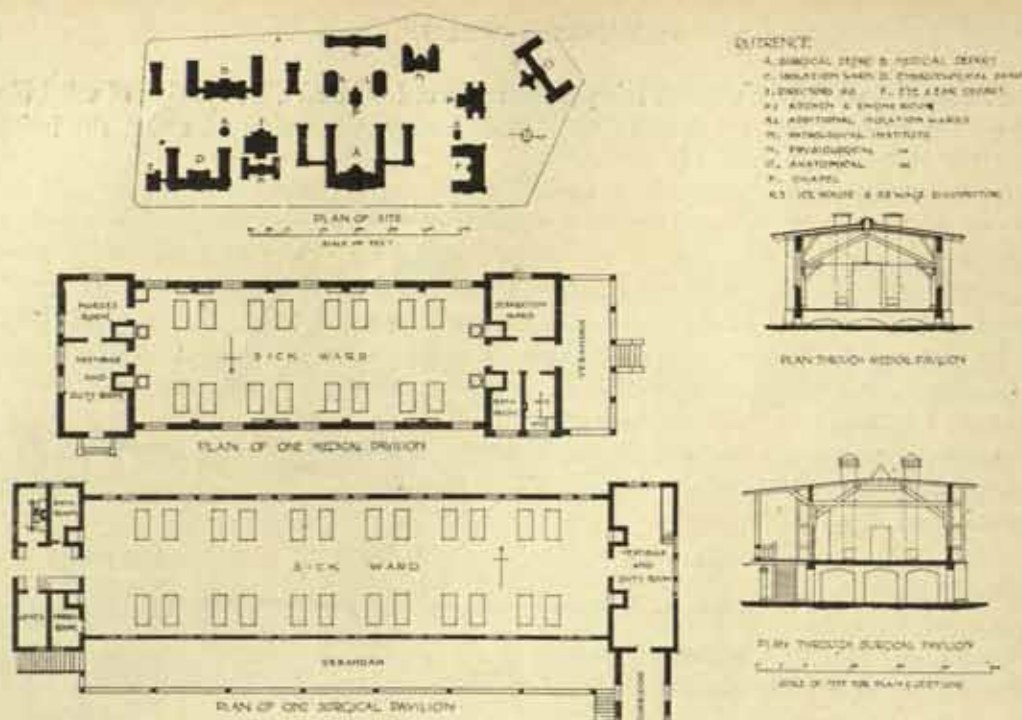


FIG. 7.—HALLE UNIVERSITY HOSPITAL.

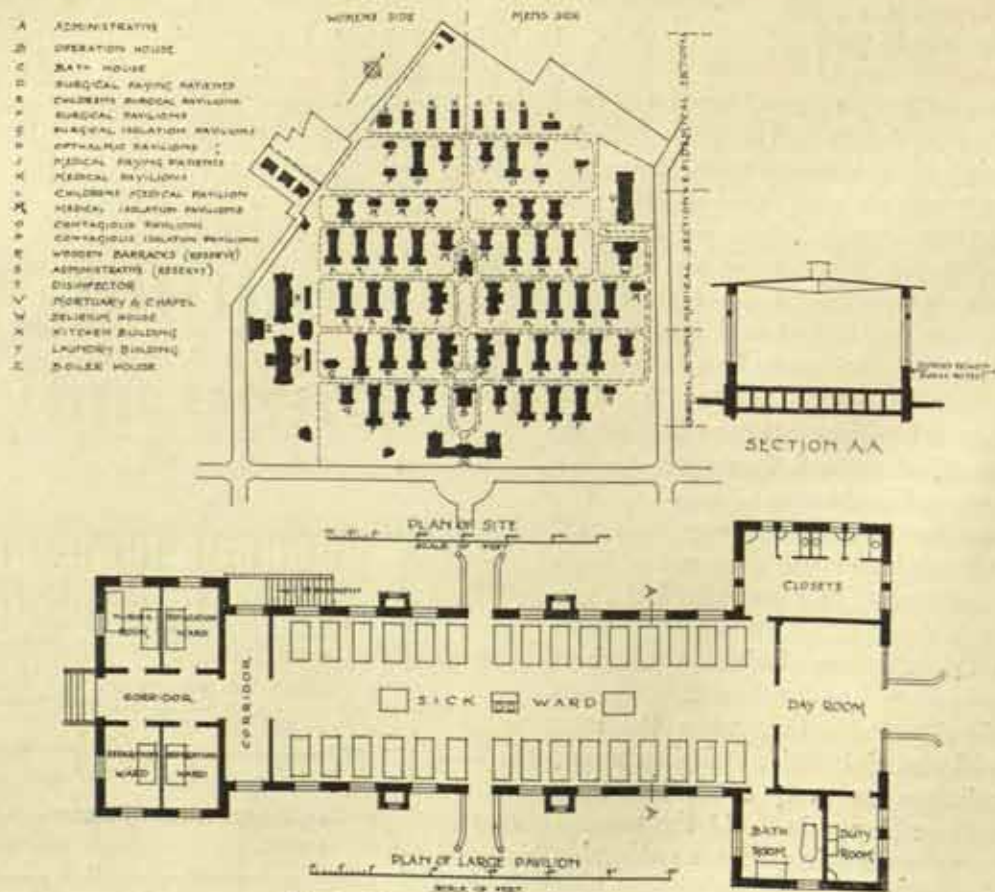


FIG. 8.—HAMBURG NEW GENERAL HOSPITAL.

Dr. Monat, quoting Dr. Guy, tells how in 1758, owing to insufficient accommodation in the proper buildings,

it was resolved to erect a temporary shed with deal boards upon the open forest; to thatch it with a coat of new straw, thick enough to keep out wind and rain, and to make it large enough for 120 patients. A country workman did the work (charging for the use of the boards) for £40. Here I quote Dr. Brocklesby's words, says Dr. Guy: "Although the hovel was finished in a fashion the most slovenly, and apparently inadequate to the end proposed, upon trial it was found that, notwithstanding most extraordinary cold as well as moisture, which the sick there lodged had suffered, remarkably fewer died of the same diseases, though treated with the same medicines and with the same general regimen, than died anywhere else; and all the convalescents recovered much sooner than they did in any of the warmer and closer huts and barns hired round Newport, where fires and apparently better accommodation of every sort could be provided for them."

I have not time to read to the end of this extraordinary account, which mentions several other experiments of a like kind.

This evidence of the efficacy of purely temporary structures almost suggests that palatial permanent buildings are quite unnecessary, if not wrong in principle. On the other hand,

temporary structures are never very satisfactory as buildings and they deteriorate quickly. There is no reason why permanent buildings should not be quite as efficacious for the cure of the sick and injured (which is the main object), if only they do not impede the free access of light and air. Both have, however, been subordinated to some extent to the supposed necessity for keeping up an equable temperature in wards.

I find in a Report on Modern Hospital Construction by Mr. John Begg [F.] to the Govern-

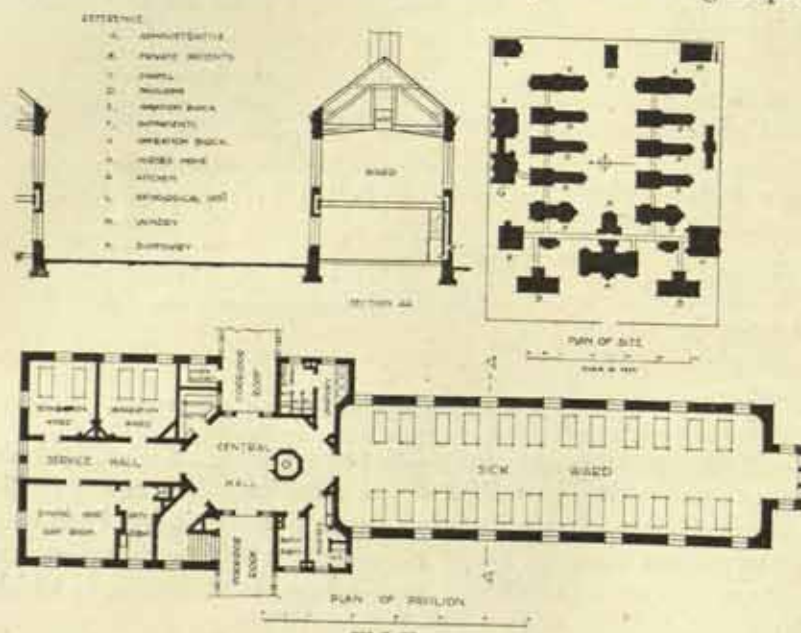


FIG. 10.—JOHNS HOPKINS HOSPITAL, BALTIMORE.

ment of Bombay (1904), this paragraph:

The growing dissatisfaction with what, in a vain attempt at an apologetic for an unreliable and an unscientific thing, has been called "the natural system of ventilation," is leading to developments not only in ventilation, but in the whole arrangement of the hospital that may revolutionise the science of hospital planning. The Victoria Hospital at Belfast shows the latest developments in this direction, and is, I am inclined to think, an example of the hospital of the future.

Does it not simply amount to this, that in order to keep our wards warm we have to control the admission of cold air—and that is difficult, if not almost impossible, in this climate; we are therefore advised to fall back upon mechanical ventilation, which is warranted to supply volumes of very clean air (though anything but fresh) with a nicely adjusted temperature at all times!

The open-air hospital may be impracticable in view of a number of considerations which cannot at present be conveniently ignored. Nevertheless, there seems to be every reason why

ward buildings should be exposed as much as possible to the air and sunlight; and this can be properly achieved only with one-story pavilions widely spaced on the site, and designed with few shadow-casting and air-obstructing projections. This has always been recognised in Germany and France, and in support I may be allowed to quote the late Henry Saxon Snell, in "Hospital Construction and Management," who, writing in 1889, says:

No country in the world has, up to the present time, made such progress towards a practical elucidation of the recognised principles of hospital construction as Germany. There, the development of the system of erecting sick-wards as single-storied isolated pavilions has for some years been fully carried out, and numerous examples of this mode of building are now, therefore, to be found in all parts of the country. France is slowly following the good example thus set to it in the hospitals erecting on M. Tollet's system.

England has not to the present time awakened to the obvious desirability of altering the present method of constructing its hospitals three, four, and five stories in height; and although the fact has long been generally recognised that the various blocks of sick wards should be kept well apart from one another, yet (except in one

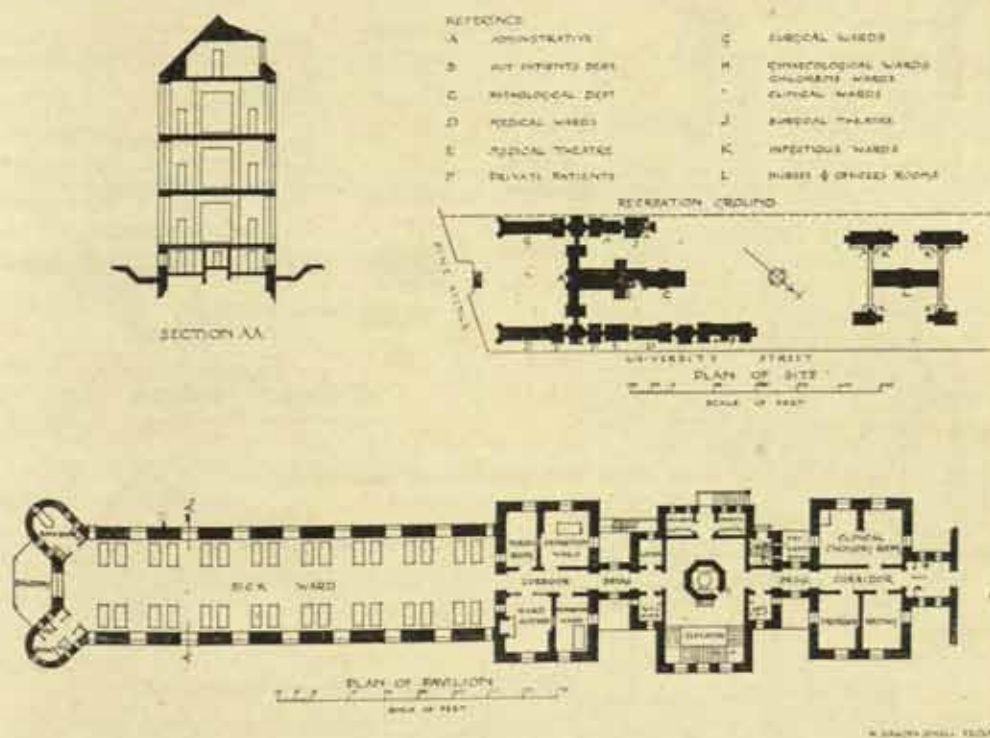


FIG. 11.—ROYAL VICTORIA HOSPITAL, MONTREAL, CANADA.

or two isolated instances) the separation is rendered incomplete through the intercommunication of the blocks by means of enclosed corridors. Complete separation has, however, been carried out in some of the hospitals for contagious diseases erected in different parts of England, and it is to be hoped that the system may shortly become more general.

This paragraph is quoted by Mr. John Begg in the report referred to above, and he remarks therein that it "shows very clearly, defines very concisely, what was considered the 'be-all and the end-all' of hospital construction at the period—separation, isolation, and ventilation." He does not disguise his opinion that these principles were out of date in 1904; and he quotes Dr. Renvers, of the Moabit Hospital, Berlin, "that the system of isolated one-story wards, while good for an infectious disease hospital, (is) most unsuitable for general purposes. It (is) wasteful of room, difficult of administration, and exposes the patients to risks of pneumonia."

you by means of some rough diagrams made for the purpose (fig. 16). In each case I have allowed an air zone round each block equal in width to the height of the block. Thus the distance between any two blocks is just twice the height of one. You will notice, too, that the two- and three-story blocks are larger by just the area of the necessary staircase. I may as well acknowledge at once that the distance between the one-story blocks appears, nevertheless, to be inadequate, and in practice we should, no doubt, widen it if only as a matter of appearance.

We see, therefore, that one-story blocks require only about 25 per cent. more ground than blocks of three stories. Actually we should probably space the one-story blocks rather more widely; but then they would be even better for light and air.

This excess of 25 per cent. applies only to that part of the site occupied by ward blocks,

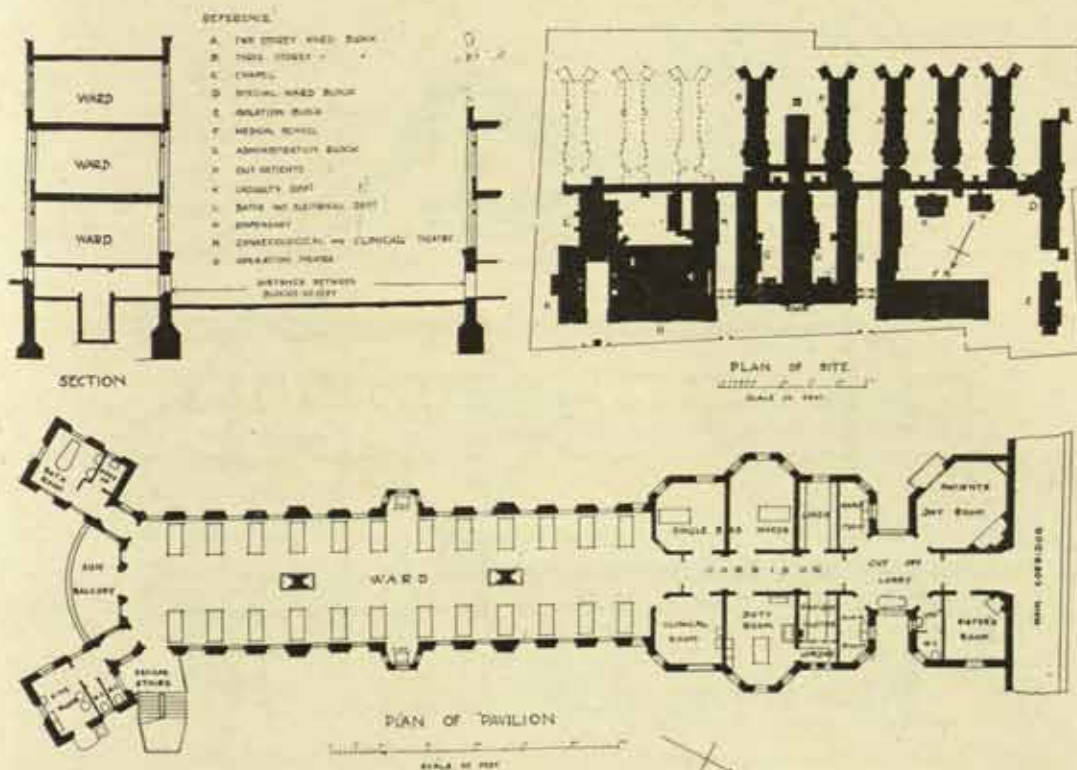


FIG. 13. - KING'S COLLEGE HOSPITAL. Architect, Mr. W. A. PITT.)

and in case of a hospital of, say, 500 beds, would amount to an additional one and a quarter acres. At £1,000 per acre, that would mean a little over £1,250, a very small proportion, indeed, of the total cost of the hospital. At £10,000 per acre it would mean £12,500 out of a total cost of, say, £250,000.

Apparently the length of corridor to be traversed from the two wards furthest apart is much greater in the case of one-story blocks, but if the flights of stairs necessary for two or more stories are measured in, there is very little difference; and we may also remember that the labour of mounting stairs is very much greater than walking on the flat—about twenty times, I believe. Of course, we have lifts, but they cost a good deal to instal, maintain, and run. Without lifts the balance is largely in favour of one-story blocks. Both time and energy are saved, as well as general upkeep and cleaning. More dirt collects upon staircases (and it is less easily removed) than in straight corridors.

Then as to the cost of the actual buildings. A two- or three-story block is no doubt rather less in cost, cube for cube, than a single-story block, because the cost of roof and foundations is about the same for three stories as one. On the other hand, walls are thinner and foundations less, and neither lifts, staircases, nor fire-escape staircases are required for one-story blocks, and the cost of these items goes a long way towards redressing the balance.

In one-story blocks the ward is practically surrounded by air. In three-story blocks one at least of the wards has only its sides and ends exposed.

A real sun room or balcony can be obtained at the south end without the disadvantage of overshadowing a lower ward. It is also possible to secure direct and powerful extraction shafts

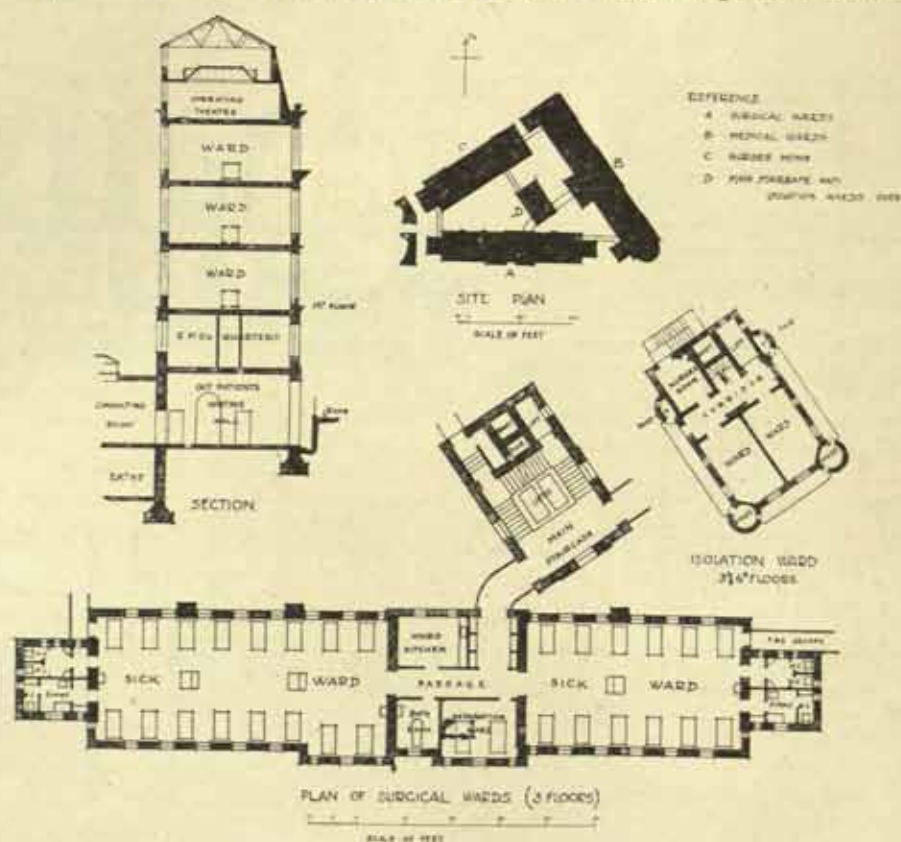


FIG. 14.—CHARING CROSS HOSPITAL. (Architect, A. Saxon Snell.)

for foul air at the top and along the centre of the ward, which is certainly the best position. No light-obstructing and hideous fire-escape staircase or bridge is required.

Lastly, it lends itself to a cross-section of the wards, which for purposes of ventilation appears to be almost ideal—i.e., the "forme ogivale" adopted by Tollet in several French hospitals—practically a Gothic arch and about 25 feet from the floor to the apex. His wards are also raised six or eight feet above the ground. Therein he overdid the principle, for the administration found later that this space under the wards could be closed in easily and usefully converted into stores, &c.

The extreme height of 25 feet seems unnecessary, too; as in enclosed spaces there is but little movement of the air beyond a height of 12 feet above the floor-level. I shall show you [fig. 18] a modification of this section, which was adopted with good results in one of the wards.

at Charing Cross Hospital; and I may add that it has been found that the ventilation and temperature in this ward are more easily controlled than in the others which have the usual flat ceilings.

The ward unit, which comprises a large or associated sick ward, one or two separation wards, and the rooms and offices connected with them, differ but little in general arrangement in modern hospitals, yet the differences are interesting and instructive. Of the plans illustrated each comprises the block plan of a particular hospital and large scale plan and section of a ward unit.

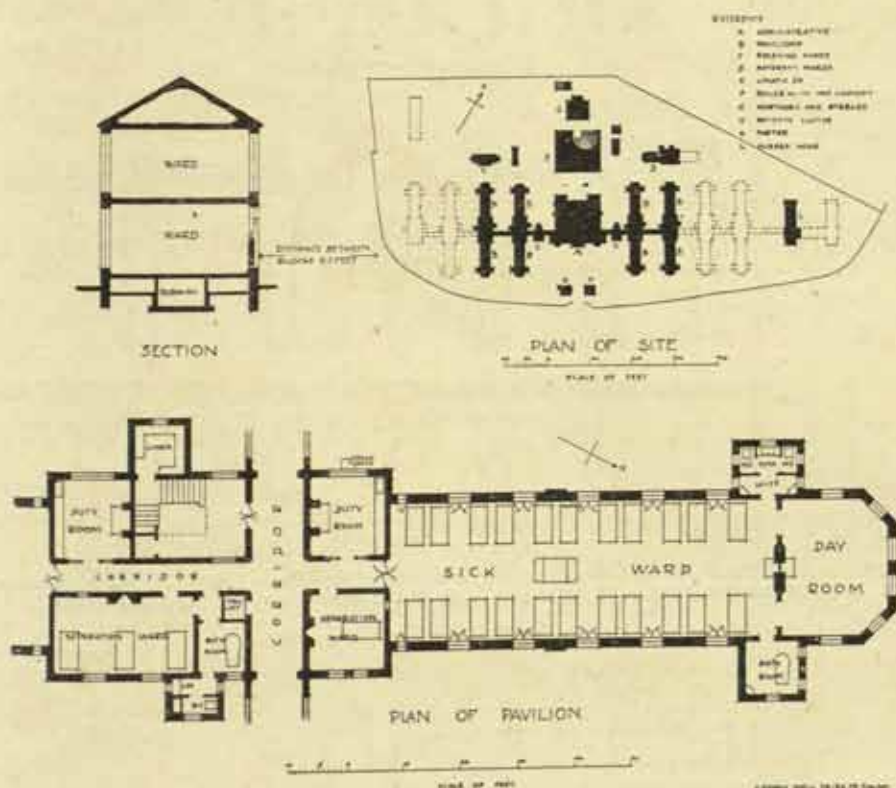


FIG. 15.—WILLERDEN PARISH INFIRMARY. (Architect, A. Saxon Snell.)

I am indebted to Mr. Edwin T. Hall, Mr. Percy Adams, Mr. William A. Pite, and others, for facilities in preparing some of these plans. These gentlemen and Messrs. Keith D. Young and Hall have designed some of the finest hospitals in this country.

Finally, I show a model plan of a ward unit [fig. 18]. I do not present it to you as in any way superior to those which have preceded it; but it serves to illustrate some of the points I have endeavoured to make in this Paper. It comprises a main sick ward for twenty beds, and separation wards for four beds. Many years ago we were advised that thirty-two was the maximum number of beds which could be superintended in one ward; but in modern practice it has been reduced considerably. The ward is 26 feet wide, with an average height of 13 feet, giving a cubic space per bed of 1,350 feet, or thereabouts. (With effective ventilation 1,000 feet is quite enough.)

The axis of this block is roughly north and south, and at the south end is a day or sun room, with large French windows, which can be turned right back to permit of its conversion to a covered verandah. It is low enough to allow of a high south window into the ward itself.

The conveniences for patients and nurses' sink-room are placed in an annexe, entered from a lobby at the north end of the ward, and convenient for use also by patients in the separation wards. So placed this annexe avoids shadowing the ward windows from the direct rays of the sun. The angle of incidence of the sun's rays in the early morning and afternoon allows penetration to a greater distance than is the case when it is at its meridian. The best average is obtained midway between the zenith and the rising and the setting. The direction of the rays at these times would be towards the south-east and south-west corners of the wards, and, oddly enough, it is just at these points that the sanitary annexes are so often placed.

In the winter, when sunlight is as valuable as it is restricted, the sun is at a low elevation, and it is then that a south window is so valuable. On this account the position of the day room

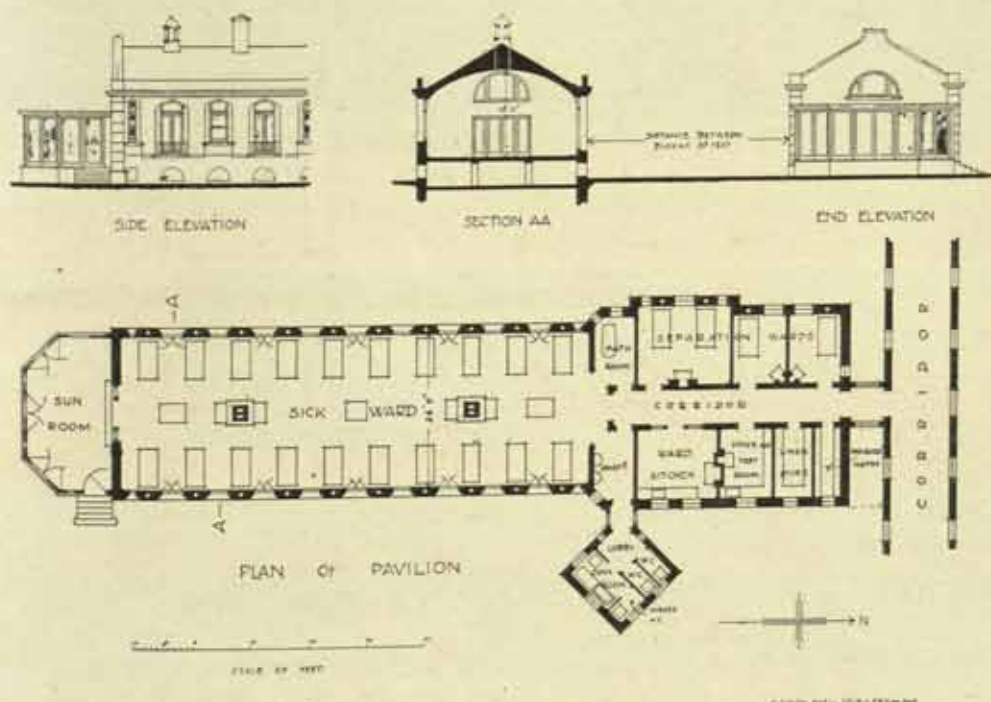


FIG. 18.—DESIGN FOR A PAVILION.

as shown on this plan may be criticised. It has, however, many other points in its favour, and in any case, as I have pointed out, a large south window opening direct into the ward is provided above the roof of the day room.

The bath-room is entered direct from the ward. It is, of course, often placed in an annexe with a cross-ventilated lobby between it and the ward, but this appears to be quite unnecessary.

Projecting sanitary annexes are in any case a nuisance, as they obstruct light and free movement of air round the wards, but for the patients' conveniences and sink-room we cannot safely dispense with disconnecting lobbies, perfect as our fittings may be. Provided, however, the lobbies are well ventilated by a cross-current of air, a projecting tower is perhaps unnecessary. I submit a small suggestion for the position of these offices which would avoid projections and, I venture to think, meet reasonable requirements in the way of disconnection.

Three separation wards are provided, a ward kitchen, patients' own clothes store, linen cupboards, &c., and a testing-room or office. There is no pantry, though one is generally provided; I believe it is as undesirable as it is unnecessary. A small tile-lined and

well-ventilated cupboard is quite sufficient for all the food, &c., which should be properly kept adjoining a sick ward.

The windows of the main block are alternately casements or French windows carried down to the floor-level, with a hopper light above, and sash windows. In mild weather it would be possible to open the casements to the full width of the window, the leaves forming screens to the heads of the beds. If heating, in addition to the central open fires, is required, small radiators might be placed immediately under the sash-windows.

The floor of the ward is raised 4 feet above the ground-level, allowing free passage for the air underneath. The ceiling is covered in the manner I have already described.

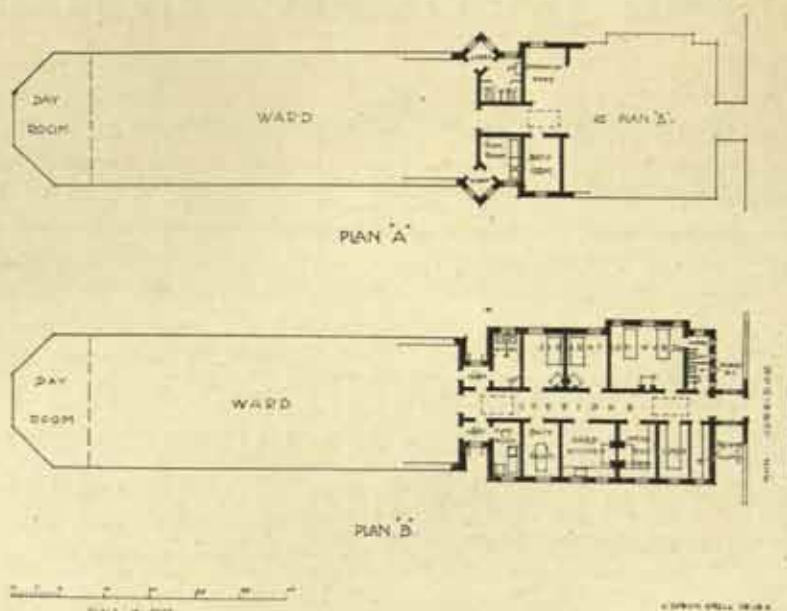


FIG. 19.—MODEL PLAN. SUGGESTION FOR ENCLOSED SANITARY OFFICES WITHOUT DETACHED TOWERS.

I have shown a closed corridor connected with each ward block by a short cross-ventilated passage. It is a concession to comfort, and questionable at that. In the great German hospitals I have shown no sheltered way is provided between the blocks.

In this necessarily short essay I have confined myself to the ward unit; but I need scarcely remind you how much interest attaches to so many other buildings which go to make up the modern hospital. An evening might be spent profitably and interestingly upon the subjects of operating theatres and out-patients' departments, to say nothing of nurses' homes, medical schools, research departments, and other minor buildings.

Even on the subject of ward units I have omitted reference to a score of important matters which affect their planning and construction; but I trust that the points I have dealt with—all too briefly—will afford material for an interesting and informative discussion.



FIG. 1.—KING'S COLLEGE HOSPITAL, LONDON: ADMINISTRATION BLOCK (Architect, Mr. W. A. Pite).

A COMPARATIVE STUDY OF MODERN ENGLISH, CONTINENTAL, AND AMERICAN HOSPITAL CONSTRUCTION.

By WILLIAM MILBURN, jun., B.Sc. [A.], Saxon Snell prizeman 1908,
Godwin Bursar 1910.

Read before the Royal Institute of British Architects, Monday, 17th February 1913.

I AM very conscious of the honour you have conferred upon me in asking me to read a Paper on the subject of modern hospitals, and, as it has been my privilege and pleasure to inspect, under your auspices, a considerable number of modern Continental and American hospitals, I propose to endeavour, in a brief survey, to describe and compare the characteristic features of the modern hospital of our own country, of the Continent, and of America, in the hope that by so doing some information or suggestions may be obtained which will be of aid in the designing and construction of these institutions, which are of vital importance to the health and well-being of the community.

When one remembers the discoveries and progress in medical science and in the treatment of the sick which have come to us from the Continent and from America, I think it is evident that a study of the design and construction of the hospitals of these countries will not only afford us considerable interest, but will offer us many suggestions and ideas for improvements in our own construction; much in the same manner as the hospitals of these countries are receiving considerable benefit by the careful study and attention which their architects and the members of their medical professions are paying to our own medical institutions.

I shall confine my attention principally to the general disposition of the buildings in relation to one another, and to the general arrangement of the wards and their annexes; it being impossible in the limits of this Paper to deal with the design of the auxiliary departments or to go into detail in matters of construction and equipment.

In order to appreciate fully the problems involved in the designing of these institutions, I propose, before treating of the actual examples, to endeavour to indicate briefly the various types of hospitals, their organisation and management, and the general principles upon which their construction is based.

THE ORGANISATION OF HOSPITALS.

The modern hospital is primarily an institution for the treatment of the sick, but, in addition, it has become a centre for medical education, clinical study, research, and investigation. Speaking broadly, there are two groups of hospitals—general and special—the distinction between the two being that a general hospital receives patients suffering from all classes of disease, whilst a special hospital is for the reception of one particular form of disease or group of diseases respectively. The foregoing definition of a general hospital, however, as to the reception of all forms of disease only applies, as a rule, to hospitals which are maintained by public funds, as those of Germany; our own general hospitals, which are supported by the voluntary system, usually excluding infectious and certain other diseases, and it is important to remember that the system by which a hospital is erected and maintained may often exert considerable influence on its design.

The modern hospital is organised and managed on scientific and business principles, and may, from the point of view of the architect, be considered as comprising two main services—medical and general—the medical services being all those departments which directly relate to the care and treatment of the patients, whilst the general services comprise such departments as the administrative, housekeeping, laundry, power, &c.

The medical services of a general hospital are divided into separate departments, so as to allow of the classification of the different diseases, there being usually two main departments—medical and surgical—and very often special departments for such diseases as ophthalmic, nose throat and ear, children, gynaecological, &c. Each department is subdivided into a number of ward units, the accommodation of each unit usually comprising one large ward, a number of small wards, and the necessary service, sanitary, and medical rooms—thus becoming, as it were, almost a complete hospital in itself. The total number of beds in each unit is determined by the nursing staff and the nature of the disease, and usually varies from twenty to thirty. Attached to and completing each department are the special rooms requisite for the particular disease, such as the operating theatres in the surgical department, and the hydro- and electro-therapeutic rooms in the medical department.

The separate departments and units throughout the institution are, as it were, self-contained and complete in themselves, yet at the same time they are all mutually dependent upon one another, and are so organised and managed as to form a complete and organic whole.

THE GENERAL PRINCIPLES OF HOSPITAL CONSTRUCTION.

When one comes to study the principles upon which hospital construction is based, one finds considerable difficulty in laying down any hard and fast rules, largely owing to the fact that the sciences upon which hospital construction depends—viz. medicine and hygiene—are, speaking generally, continually progressing by the aid of new discoveries and research, and it is impossible to say at any time that finality has been reached.

This becomes at once apparent if we consider for a moment the influence which the discoveries in the field of bacteriology have had during the last thirty to forty years on hospital construction. Prior to Pasteur's investigations and the discovery that micro-organisms are usually the causes of disease, it was the general opinion, I believe, that disease was transmitted from one person to another by a definite substance which passed through the air, and that whilst all the persons in one building were liable to be infected, persons in another building at a distance would be immune; and as this view was confirmed by the actual experience in hospitals and in times of war, the practice arose—more particularly on the Continent—of constructing hospitals of a number of small, one-story, isolated pavilions, and so doing away with large numbers of sick together. On the application by Lord Lister of Pasteur's discoveries, and the

adoption of antiseptic methods, a positive basis for the science of hospital construction was at once determined; and as the modern view appears to be that the transmission of disease in a hospital by aerial convection is rare, and that in the majority of cases it takes place by contact, and can be avoided by the adoption of aseptic precautions, we see that at the present day the principles of isolation and separation are not of such primary importance as they were in the days of hospital epidemics, and that it is no longer necessary to construct hospitals as one-story detached pavilions.

The medical requirements and the problems involved in the treatment of the different diseases must, of course, be laid down by the medical profession; but it is the province of the

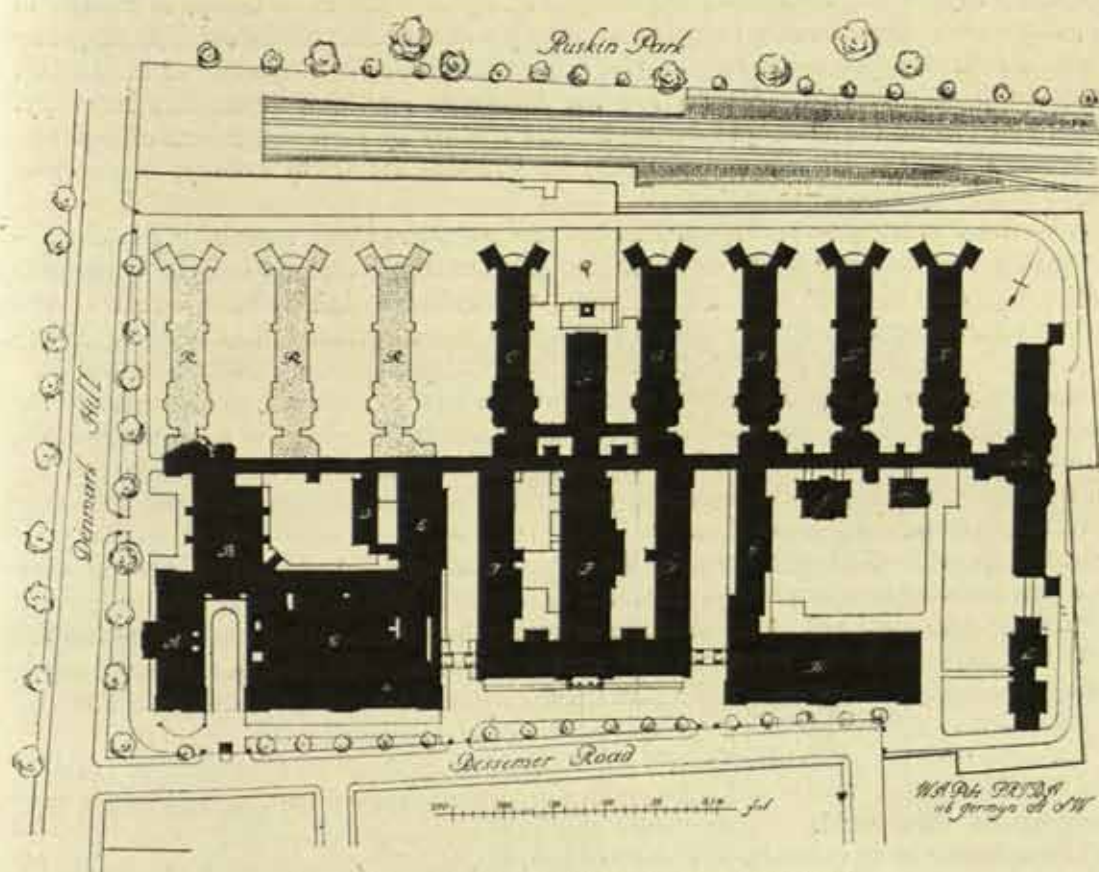


FIG. 2.—KING'S COLLEGE HOSPITAL, LONDON. BLOCK PLAN.

- | | | | |
|-------------------------------------|--|---|-----------------------------------|
| A, Casualty Department. | F, Administration Block. | K, Gynecological and Clinical Theatres. | O, Three-Story Ward Blocks. |
| B, Baths and Electrical Department. | G, Pathological and Post-Mortem Block. | L, Isolation Block. | P, Chapel. |
| C, Out-Patient Department. | H, Medical School. | M, Special Ward Block. | Q, Central Station. |
| D, Almoner. | J, Operation Theatres. | N, Two-Story Ward Blocks. | R, Ward Blocks, future extension. |
| E, Dispensary. | | | |

hospital architect so to design the buildings as to facilitate the treatment and assist in the restoration of the patient to health.

Then the requirements of hygiene in the matters of fresh air, sunlight, environment, diet, and rest, as important factors in treatment, produce requirements which greatly influence the design and construction of a hospital in such matters as the selection of the site, the orientation and arrangement of the buildings, the facilities for ventilation, &c.

In addition to the medical and hygienic requirements, the buildings must be so adapted that the various services and administrative departments can be conducted in the most efficient

and economical manner; whilst careful attention must be given to the heating and artificial lighting, sanitation, water supply, transport, and very many other things.

MODERN ENGLISH HOSPITALS.

In England the general hospitals and the majority of the special hospitals are erected and maintained by the voluntary system of contributions, whilst the Poor-Law infirmaries, the isolation hospitals, and the military and naval hospitals are erected and supported either by the municipalities or by the State.

The design and planning of the English general hospital has at the present time arrived at a definite type which, in its main outlines, is rarely departed from except in matters of detail, the system adopted being the pavilion principle of detached blocks connected together by corridors. This type may be said to have originated with the construction of the Herbert Military Hospital, Woolwich, 1860-64, and the Blackburn and East Lancashire Infirmary, 1858-65, and was further developed during the last century by such well-known examples as St. Thomas's, London, Norfolk and Norwich, Bedford County, Derby County, Birmingham General, and many others.

The normal plan followed is that of a central administrative block, containing the administrative and domestic departments, on either side of which and branching at right angles from a main corridor are the ward pavilions, one, two, or three stories in height, with their central axes running north and south, whilst the operating blocks, out-patients', casualty, and admission departments, and the medical school—the latter only found in clinical hospitals—are conveniently grouped in relation to the main corridor, the wards, and the entrances to the hospital. The nurses' and servants' homes are either self-contained blocks or a portion of the administrative block, whilst the laundry and power-house blocks, the mortuary block, &c., are usually detached buildings, with separate access; and a detached isolation block for septic and infectious cases is often provided.

In the majority of English hospitals the general arrangement of the rooms in the ward unit is the same, although variations in detail are found. The large ward usually contains about twenty-four beds, and at its southern extremity two disconnected sanitary towers are placed, containing the baths, lavatories, and sanitary annexes, whilst between these towers is a balcony for open-air treatment, and at the entrance end of the unit, opening from a central corridor, are the small wards and the requisite service and medical rooms.

The most recent of our general hospitals is King's College Hospital, London (figs. 1 and 2), which is to be opened shortly, and will undoubtedly rank as one of the finest and most complete hospitals in the world.

I am also venturing to illustrate a design [fig. 3], which I prepared a few years since for a general hospital for a provincial town, to accommodate two hundred beds. It was an attempt to produce a typical plan, based on a careful study of English hospital design and construction; but I may say that if at the present time I were to re-design it I should considerably modify it in some of the details.

Up to now we have been treating of hospitals situated on open or fairly open sites, but when we come to consider the sites of restricted area which only are available in the densely populated quarters of our great cities, or where the cost of land is high, it is evident that the problem of designing a hospital to comply with the hygienic requirements in the matters of aëration and ventilation to the wards is one needful of much thought. We possess, however, a number of hospitals in which these difficulties have been overcome by the application of the radial principle to the ward blocks, of which I may mention University College Hospital, London [fig. 4], the Belgrave Children's Hospital, London, and the Eastern District Hospital, Glasgow.

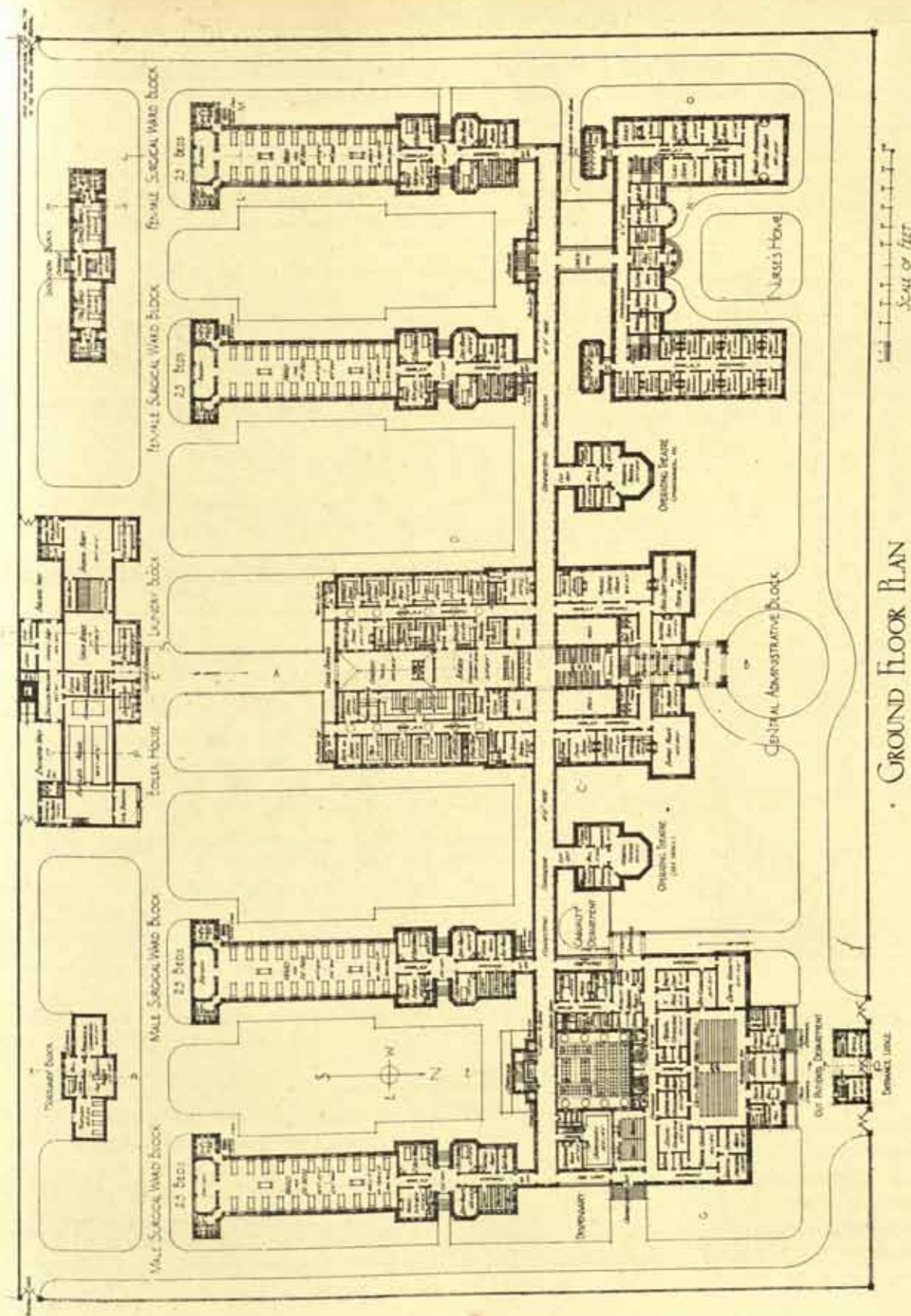


FIG. 2.—A DESIGN FOR A GENERAL HOSPITAL (Saxon Shell Prize, R.I.B.A. 1909), by William Milburn, jun., A.R.I.B.A.

The new Royal Infirmary at Glasgow [fig. 5], which is six stories high, also presents a most interesting solution of this problem. It comprises three main departments for surgical, special diseases, and medical cases respectively, disconnected from one another by open loggias. The planning of the separate departments is of particular interest, as they are so arranged that each honorary physician or surgeon, as the case may be, has the whole of his wards for males and females grouped together on one floor, with, in the surgical department, a complete operating suite. In addition, in each group are the quarters of the resident medical officer,

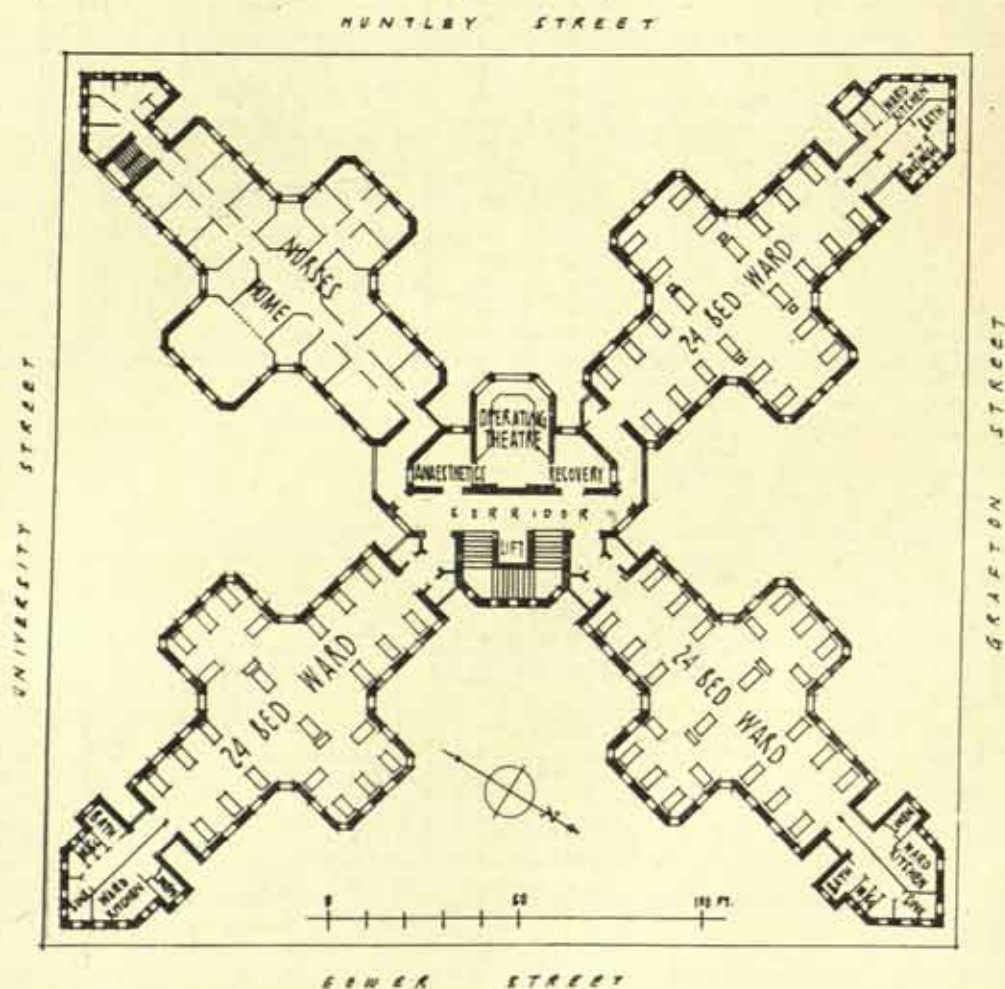


FIG. 4.—UNIVERSITY COLLEGE HOSPITAL, LONDON: FIRST FLOOR PLAN. (Architects Messrs. Alfred Waterhouse & Son.)

it being held desirable, I believe, by many administrators that the resident should reside in his unit, not only that he may be available when required at the shortest notice, but that he may be afforded facilities for research work and study which are not obtainable when he is quartered in the central administrative block.

Special hospitals are an important class, and provide accommodation only for one particular disease or group of diseases respectively, such as hospitals for children, women, ophthalmic, skin, dental, &c. They do not, as a rule, provide a very large number of beds, and are often situated on restricted sites; but in their design the same principles are followed as in general hospitals. Modern examples are the Liverpool and Sunderland Children's

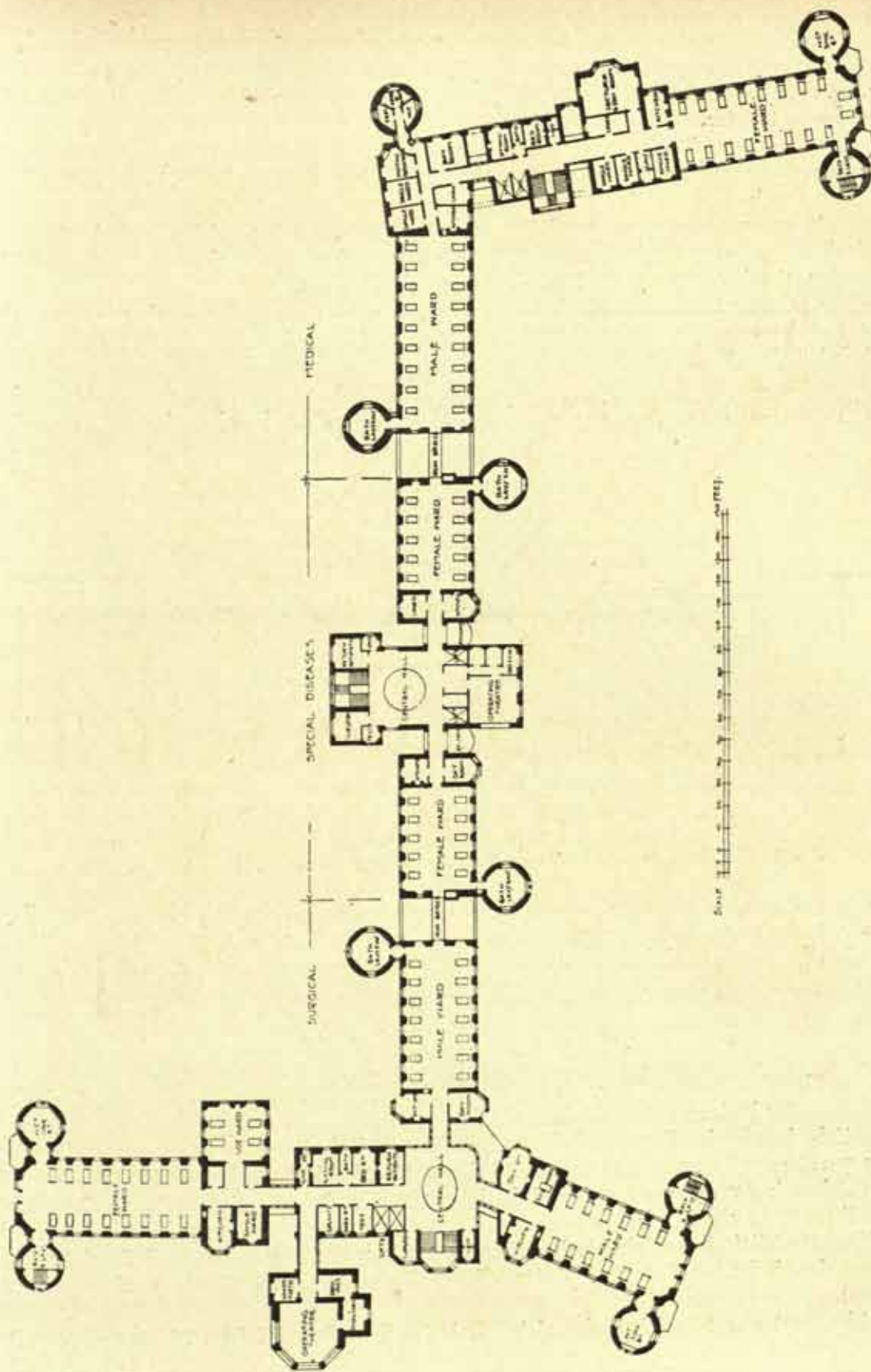


FIG. 5.—GLASGOW ROYAL INFIRMARY: FIRST FLOOR PLAN. (Architect, Mr. Jas. Miller, A.R.S.A. [F.])

Hospitals, and Glasgow and Chelsea Hospitals for Women; the latter, which I illustrate [fig. 6], is to be constructed shortly, and presents a number of most interesting features which I shall refer to later.

The Poor-Law infirmaries have in recent years greatly developed, and at the present day very many of these institutions can compare favourably in their design, construction, and equipment with many of the general hospitals erected under the voluntary system. They do not, however, provide accommodation for out-patients, nor is provision made in them for medical education. Typical modern examples are Edmonton, Leicester, Hammersmith, Willesden, Camberwell, and the Central London Sick Asylum.

The primary function of the isolation hospitals for infectious diseases is to prevent the spread of the diseases amongst the public at large, and in their design and in the adaptation of their buildings to the character of the treatment required for the different diseases they often rank among the finest of our medical institutions. At the present time very interesting developments are taking place in the design of these institutions, based on the modern medical

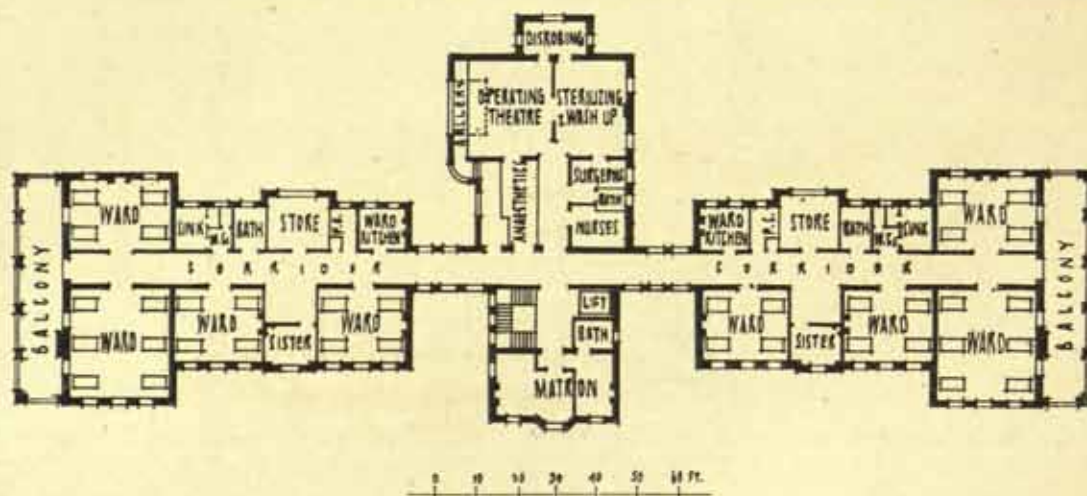


FIG. 6.—CHELSEA HOSPITAL FOR WOMEN: FIRST FLOOR PLAN. (Architects, Messrs. Young & Hall.)

opinion that infection in a hospital is usually conveyed by contact, and not by aerial convection, and the various systems in vogue, such as the "box" or "cubicle," "compartment" and "barrier," are of great interest. Among modern examples of these institutions are the Sea-croft Hospital, Leeds, and the City Hospitals at Edinburgh and Liverpool.

MODERN CONTINENTAL HOSPITALS.

France.—France for a long period has presented many valuable contributions to the science of hospital construction, such as the model hospital plan prepared by the Académie des Sciences as far back as 1786—the investigations of Tenon on the subject of the rebuilding of the Hôtel-Dieu, Paris—the remarkable series of hospitals designed by Tollet, with their one-story pavilions with open basements, and the wards of ogival section—and at the present time, although a very large number of the hospitals of Paris are antiquated and quite out of date, there are a number of modern examples, such as the general hospitals Boucicaut and La Nouvelle Pitié, the children's hospitals Bretonneau and Trousseau, and the infectious diseases hospitals Les Enfants Malades, Claude Bernard, and the Pasteur, of very great interest.

The most recent Parisian general hospital, La Nouvelle Pitié [fig. 7], opened recently

with accommodation for about 1,000 patients, ranks among the great modern hospitals of the world. The site is some 15 acres in extent, and of a most irregular shape, but the difficulties have been solved in a most interesting manner. The pavilions generally are of three stories of wards, the maximum number of beds per ward being twenty; and the whole of the buildings are connected together by a large subway—a characteristic feature of the Parisian hospitals—for food, linen, mortuary, and general services, but not for patients.

The design of the two pavilions of the hospital attached to the Pasteur Institute at Paris is of great interest, as in this institution it has been fully demonstrated that it is possible to treat patients suffering from different infectious diseases in the same building with practically no risk of cross-infection. The pavilions are of identical design and of two stories of wards, each floor, as will be seen from the accompanying plan [fig. 8], comprising twelve separate isolation rooms or "boxes," each for one bed; four three-bed convalescent wards, each for a different disease; the service rooms, and special receiving and discharge rooms. The upper portion of the walls of the "boxes" are glazed, the lower portion being of lava slabs, whilst the

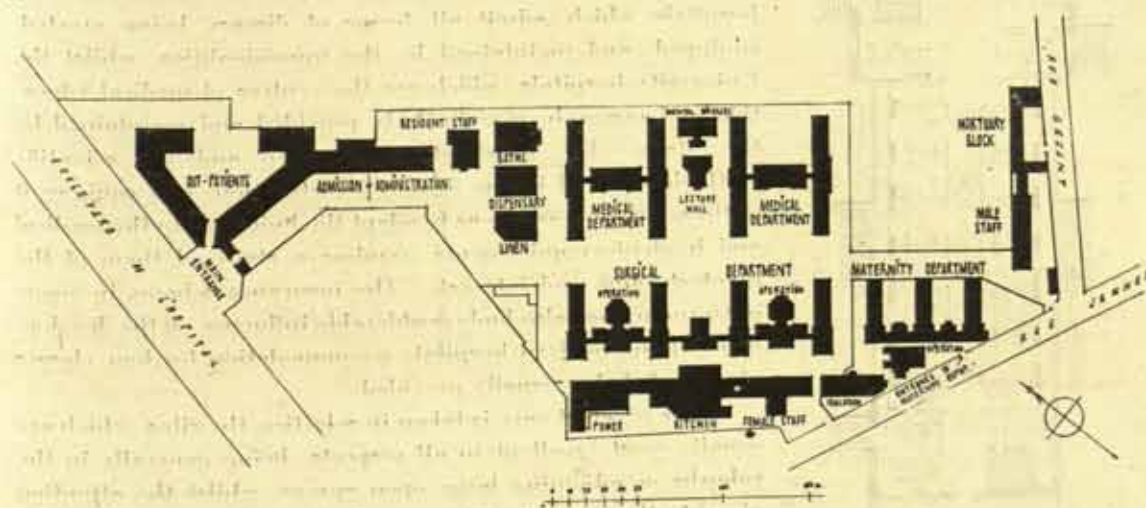


FIG. 7.—LA NOUVELLE PITIÉ HOSPITAL, PARIS: BLOCK PLAN. (Architect, M. W. Rochet.)

floors are of tiles. In normal cases the service is conducted from the central corridor, but in exceptional cases, such as plague, a "box" can be entirely isolated from the building, and the service is performed from the outside balcony, which is also utilised for the access of patients' friends in normal cases. The nursing and service is carried out on the most rigorous aseptic principles, special overalls being provided for the nurse and doctor in each "box," and provision for disinfection and sterilisation is made everywhere.

Belgium.—At the present time a very large hospital is being constructed by the City of Brussels at Jette-Saint-Pierre, some three to four miles from the city, and in connection with this scheme a most valuable work on hospital design and construction, entitled *La Construction des Hôpitaux*, has been produced by Drs. Depage, Vandervelde, and Cheval, three of the leading Brussels physicians. The type of hospital which they favour consists of one-story, detached ward pavilions, connected together by open terraces, to form the departments for the different diseases. Their model unit [fig. 9] comprises thirty beds, contained in two twelve-bed wards and six isolation wards, one of the large wards being intended for acute cases, and the other for convalescents. The service rooms are centrally situated, and large terraces and verandahs are provided, whilst every effort has been made to avoid corridors, all the rooms opening from a large entrance-hall.

Holland.—One of the best of the modern Dutch hospitals is the University Hospital at Utrecht, opened in 1908, for surgical, maternity, and gynæcological cases, with accommodation for about 170 beds. The plan [fig. 10] shows a combination of the corridor and pavilion systems, the one building, which is generally of two stories, containing the whole of the administrative rooms, wards, lecture theatres, out-patient departments, kitchen, and service rooms, nurses' home, &c. The majority of the large wards contain twelve beds, and are lighted from three sides, whilst the bath and sanitary rooms are at the entrance end of the unit opening from the corridor.

There are a number of other interesting modern hospitals in Holland, such as the University Hospital at Groningen, and some of the Amsterdam hospitals, whilst the greatest attention is paid by the authorities to the subject of hospital construction.

Germany.—In Germany the great majority of the hospitals are provided and maintained by public funds, the general hospitals which admit all forms of disease being erected, equipped, and maintained by the municipalities, whilst the University hospitals, which are the centres of medical education and research, are similarly provided and maintained by the State. The great attention given and the scientific methods adopted in the design, construction, and equipment of these institutions, so as to adapt the buildings to the medical and hygienic requirements, renders a study of them of the greatest value and interest. The insurance scheme in vogue in Germany has also had considerable influence on the development of the modern hospital, accommodation for four classes of patients being usually provided.

The greatest care is taken in selecting the sites, which are usually most excellent in all respects, being generally in the suburbs or adjoining large open spaces, whilst the attention given to the lay-out of the grounds is most remarkable. The University hospitals, which, unlike the general hospitals, admit out-patients, are for this reason, and also for the convenience of the staff and students, more often near the centre or close to the centres of the cities than are the general hospitals.

The small and medium-size general hospitals, with an accommodation up to two or three hundred beds, as a rule, comprise a main building, containing the whole of the accommodation for the non-infectious cases and the administrative and domestic departments, whilst additional blocks are provided for the infectious cases, the technical services, and the pathological department respectively. The Municipal Hospital at Offenbach may be taken as a typical example, the plan of the main building [fig. 11], as will be seen, consisting of a combination of the corridor and pavilion systems.

The large municipal hospitals, which in some cases provide accommodation for as many as 2,000 beds, consist of separate buildings, arranged primarily in three main groups—the first group comprising the buildings for the general sick, the second group the infectious diseases buildings, and the third the general services and technical blocks, such as the kitchen, boiler-house, &c.—whilst common to all three groups are the administrative and pathological blocks. The blocks for patients are again sub-divided into two main departments for medical

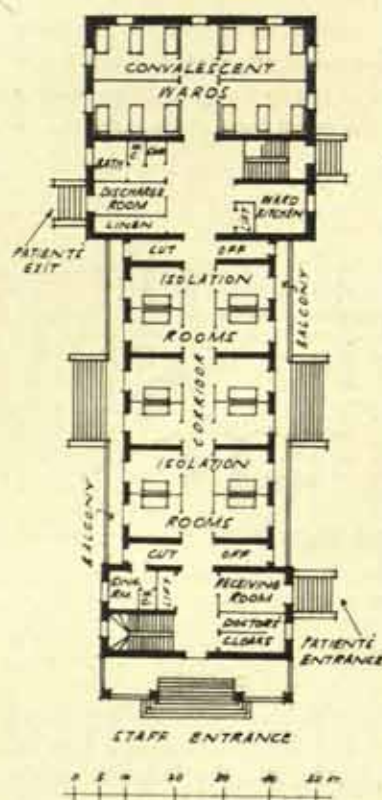


FIG. 8.—PASTEUR HOSPITAL, PARIS:
GROUND FLOOR PLAN. (Architect,
M. F. Martin.)

and surgical cases, with their baths and operation blocks respectively attached, whilst separate blocks are provided for the special diseases. The Rudolf Virchow Hospital, Berlin [JOURNAL R.I.B.A., 25th Nov. 1911, p. 37], opened in 1906, on a site of 68 acres, with accommodation for 2,000 patients, is a typical example of this grouping and arrangement of departments, and is well worthy of the closest study.

The typical German hospital of some twenty or thirty years ago, such as the Moabit, Berlin, or Hamburg Eppendorf, which, based on the lessons derived from the great wars of 1870 and on antiseptic principles, consisted of a very large number of one-story isolated pavilions—the pure pavilion system—is now largely superseded; and in very many of the modern hospitals the separate blocks are linked up to one another by closed corridors, and the pavilions are of two or three stories of wards. As a rule, however, pavilions for infectious diseases are isolated blocks of one story, each for a separate disease; but where the site does not admit of this arrangement there is no hesitation in erecting them of two or three stories, and arranging departments for different diseases, each with a separate entrance, in the one block.

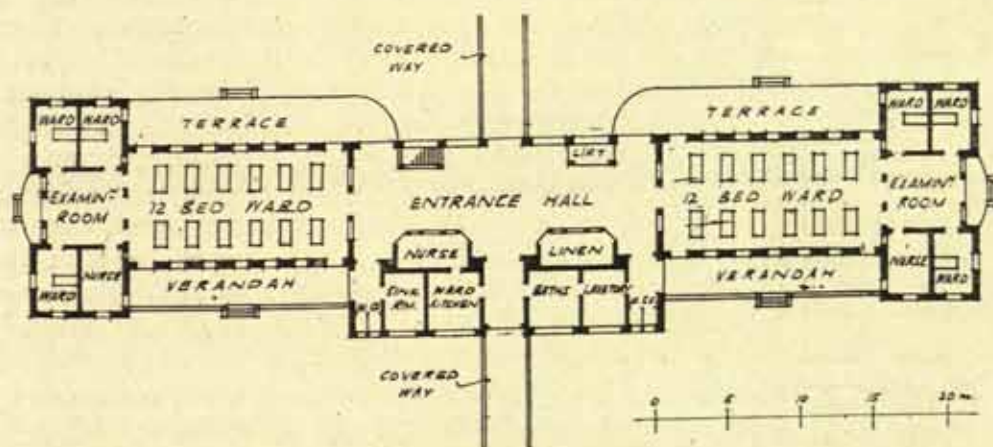


FIG. 9.—DESIGN FOR A WARD UNIT BY DRs. DEPAGE, VANDERVELDE, AND CHEVAL, BRUSSELS.

Owing to the very varied requirements of the different localities, there are no fixed types for the German hospitals, but Charlottenburg West End,* Rixdorf [fig. 12], Cologne Lindenberg,† Karlsruhe [fig. 13], and Munich III. [fig. 14] may be cited as typical examples of the general arrangement of the buildings in the modern German general hospital.

The ward units, again, are of very differing types, a striking feature, however, always being the proportion of the annexes to the large ward, the former very often exceeding the latter in area. The large wards, as a rule, do not contain more than twenty beds, fourteen to sixteen being the usual number, whilst the tendency is towards the ward with twelve beds and even less, and a very large proportion of small wards is provided. Another feature is the non-disconnection and the large amount of space allotted to the sanitary annexes. Typical examples of a ward unit attached to a connecting corridor are Cologne Lindenberg [fig. 15] and Mülhausen-i.-Els., whilst Karlsruhe [fig. 16] shows the complete department on the corridor pavilion system, and Munich III. [fig. 17] is a remarkable example on the corridor system with a large number of small wards in the unit.

The University hospitals more often comprise separate blocks or clinics, each of which becomes, as it were, a complete hospital for its own particular disease, with its patients' accom-

* JOURNAL R.I.B.A., 25th November 1911, p. 39.

† Ibid. p. 40.

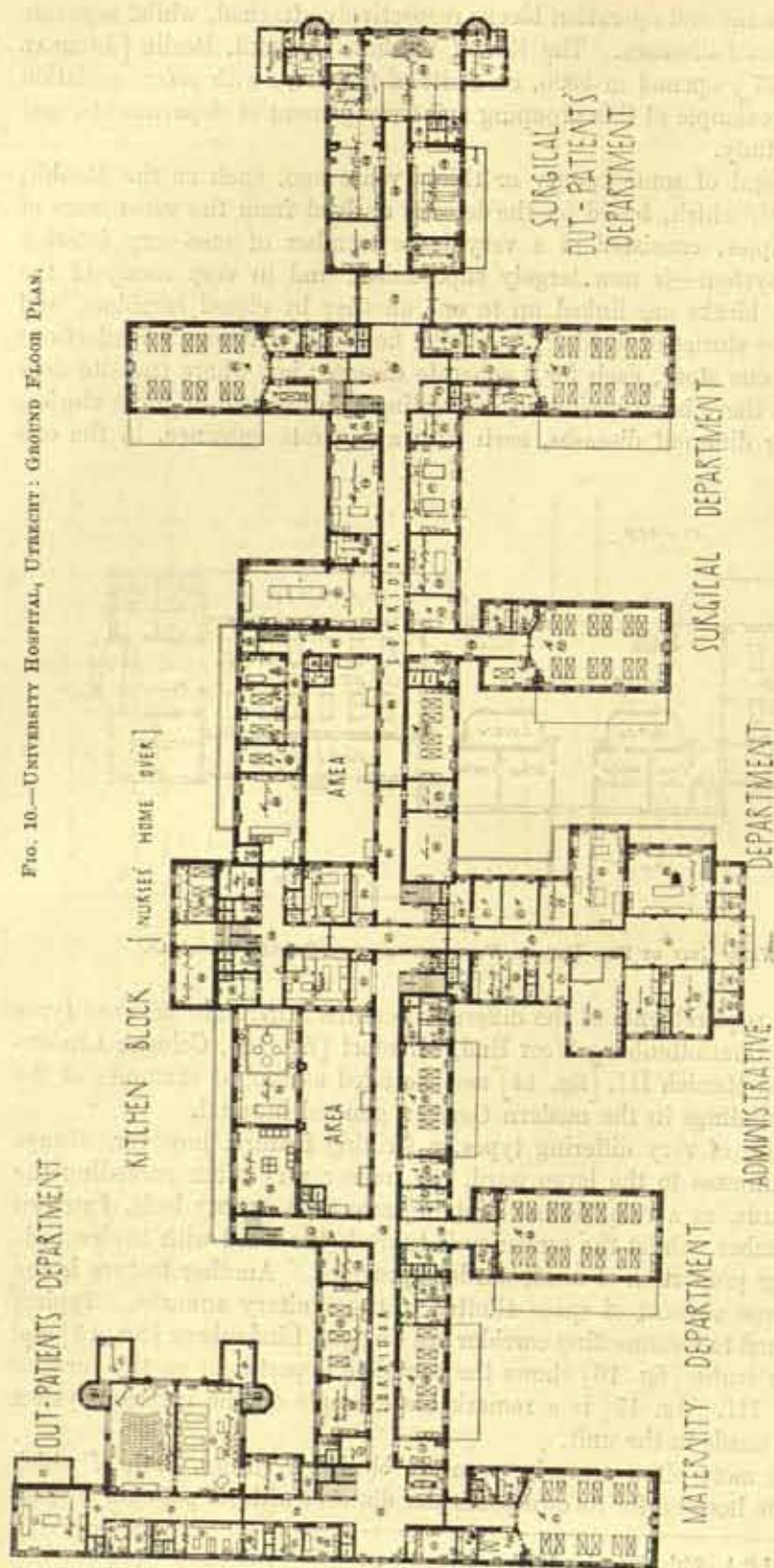


FIG. 10.—UNIVERSITY HOSPITAL, UTRECHT: GROUND FLOOR PLAN.

modation, laboratories, lecture theatres, professors' rooms, &c.; whilst common administrative, domestic, technical, and pathological blocks are provided. One of the finest examples in Germany is the Royal Charité Hospital at Berlin.

Other European Countries.—I have not visited Vienna, but I understand that, whilst among the very large number of hospitals which the city possesses there are none of outstanding merit, yet some of the modern additions are of very great value and interest, such as the new surgical pavilion of the Rudolfiner Haus.

At Copenhagen, I believe, there is a very large hospital in construction at the present time, the pavilions being planned on the corridor system, with all wards facing south, and I understand that the King Humbert "Polielinico" at Rome is another most interesting modern hospital.

MODERN AMERICAN HOSPITALS.

In the United States of America the general hospitals, which admit all classes of disease, with the exception of infectious cases—as the Belle Vue Hospital, New York—and the special hospitals for contagious diseases

are provided by the municipalities; whilst many of the religious bodies and charitable associations provide general hospitals—such as the Presbyterian or the St. Luke's Hospitals, New York—and special hospitals for children, ophthalmic, &c., diseases.

The general impression which one receives from an inspection of many of the American hospitals erected during the last ten to fifteen years is that, whilst as buildings the majority are excellent, a very large number are considerably lacking in many of the essential requirements and details necessary to a hospital, from the medical and hygienic points of view. However, at the present time the youth and wealth of the country, the immense population, the rapidly growing cities, and the demands of medical education are necessitating the erection of new hospitals; and, as the greatest attention is being devoted by the authorities to the

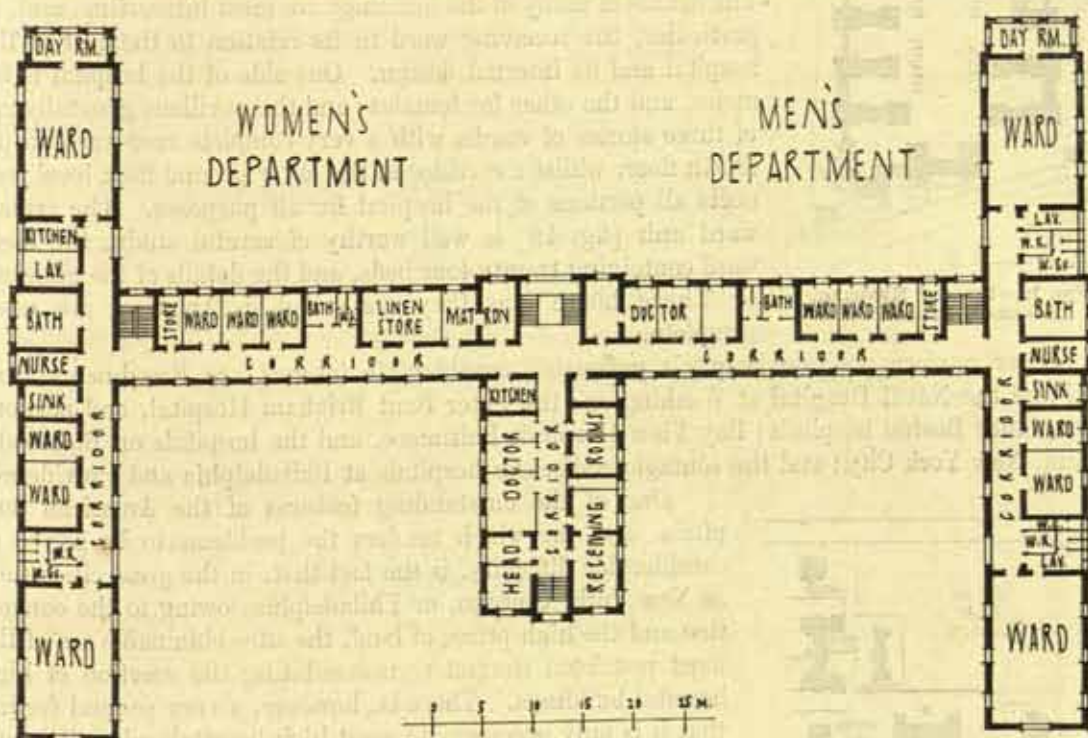


FIG. 11.—OFFENBACH MUNICIPAL HOSPITAL: FIRST FLOOR PLAN.

subject of hospital design and construction, there are a number of hospitals recently erected and others in course of construction which represent a great advance on the majority of the existing institutions, and in all respects are well up to, and in some points excel, the leading hospitals of Europe.

The Johns Hopkins Hospital, Baltimore [see plan, p. 272], opened in 1889, is still one of the best hospitals in the United States, and one of the most celebrated pavilion hospitals in the world. As originally designed the majority of the pavilions were of one story, connected to one another by open terraces, whilst a closed corridor at the basement-level of the pavilions and the ground-floor level of the administrative block connected the whole of the buildings together. The five pavilions to the south were, however, never constructed, and the site intended for them has been occupied recently by two most interesting buildings—the Phipps Psychiatric Clinic and the Harriet Lane Children's Hospital—each of five stories and of the corridor type of plan, a great contrast to the one-story pavilions as originally designed, and one which shows the changing methods of hospital construction. Additional buildings have

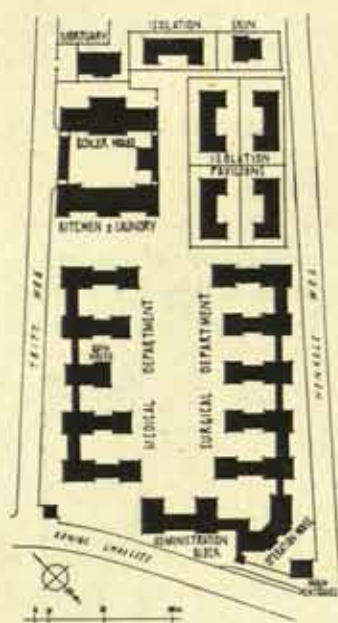


FIG. 12.—RIXDORF MUNICIPAL HOSPITAL: BLOCK PLAN.

Other modern pavilion hospitals possessing considerable interest are Freedmen's Hospital and the Naval Hospital at Washington; the Peter Bent Brigham Hospital, and portions of the other Boston hospitals; Bay View Hospital, Baltimore, and the hospitals on Blackwells Island, New York City; and the contagious diseases hospitals at Philadelphia and Providence.

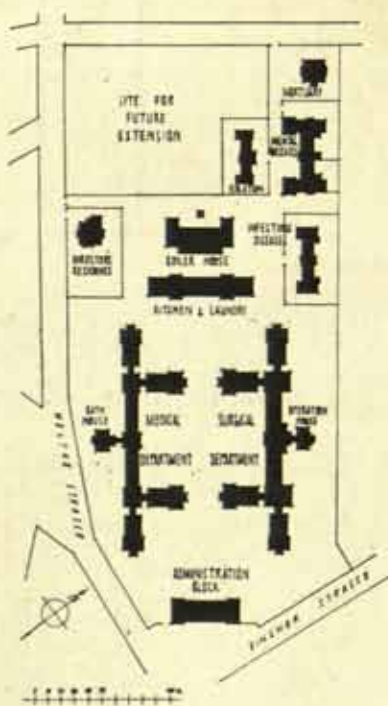


FIG. 13.—KARLSRUHE MUNICIPAL HOSPITAL: BLOCK PLAN.

also been erected upon the site, such as a pavilion for negroes, a tuberculosis dispensary, &c., whilst the original isolation pavilion is now utilised as a maternity department, and a number of other alterations have been made.

At Cincinnati the new general hospital [fig. 18], now approaching completion, the design of which is largely due to Dr. Christian R. Holmes, will undoubtedly rank as one of the great pavilion hospitals of the world. The site is some 27 acres in extent, situated on an elevated plateau in one of the suburbs, and when complete the hospital will accommodate 1,400 beds. The details of many of the buildings are most interesting, and, in particular, the receiving ward in its relation to the rest of the hospital and its internal design. One side of the hospital is for males, and the other for females; and the pavilions generally are of three stories of wards, with a very complete roof-ward on the fourth floor, whilst a corridor at the lower ground-floor level connects all portions of the hospital for all purposes. The typical ward unit [fig. 19] is well worthy of careful study, the large ward containing twenty-four beds, and the details of the annexes, or "head house" as they are called in America, are most complete.

One of the outstanding features of the American hospitals, and one which renders the problems to be solved of considerable difficulty, is the fact that, in the great cities such as New York, Chicago, or Philadelphia, owing to the congestion and the high prices of land, the sites obtainable are of the most restricted character, necessitating the erection of high hospital buildings. There is, however, a very general feeling that it is only necessary to erect high hospitals when it is impossible to obtain adequate sites, and efforts are always made to do so; but there is also a general feeling against spreading the buildings out to an unnecessary extent, and so needlessly increasing the cost of upkeep in such matters as administration, service, heating, lighting, and cleaning.

Of the high hospitals on restricted sites there are a number of examples in many of the great cities; but it is only in a few recently erected or now in course of construction that the medical and hygienic problems can be said to have been satisfactorily solved.

The New York Hospital [fig. 20], now in course of construction, is situated on a site typical of New York City, it being some 800 feet long by 200 feet wide, and about four acres in extent; but, as it adjoins the Hudson River and fronts on to a small park, it obtains the benefit of a considerable zone of aëration. The hospital will ultimately provide accommo-

dition for about 600 beds, and there will be eight independent buildings, connected together by bridges, the majority being of five stories, whilst the two central ward blocks will be of seven stories. The large wards will contain twenty beds each, and the ward unit plan will be based on the T-shaped ward plan [fig. 21], introduced by Dr. S. S. Goldwater, Superintendent of the Mount Sinai Hospital, New York, who is consulting superintendent for the new buildings; it being claimed for this plan that it possesses certain advantages over the normal plan, and is necessary to adapt the pavilion type to the requirements of the restricted site.

Two interesting modern high hospitals are the Western Pennsylvania Hospital, Pittsburg, and the Good Samaritan Hospital, Cincinnati, designed somewhat on the lines of University College Hospital, London, with ward buildings radiating from a centre, a type which is peculiarly appropriate to the restricted sites obtainable.

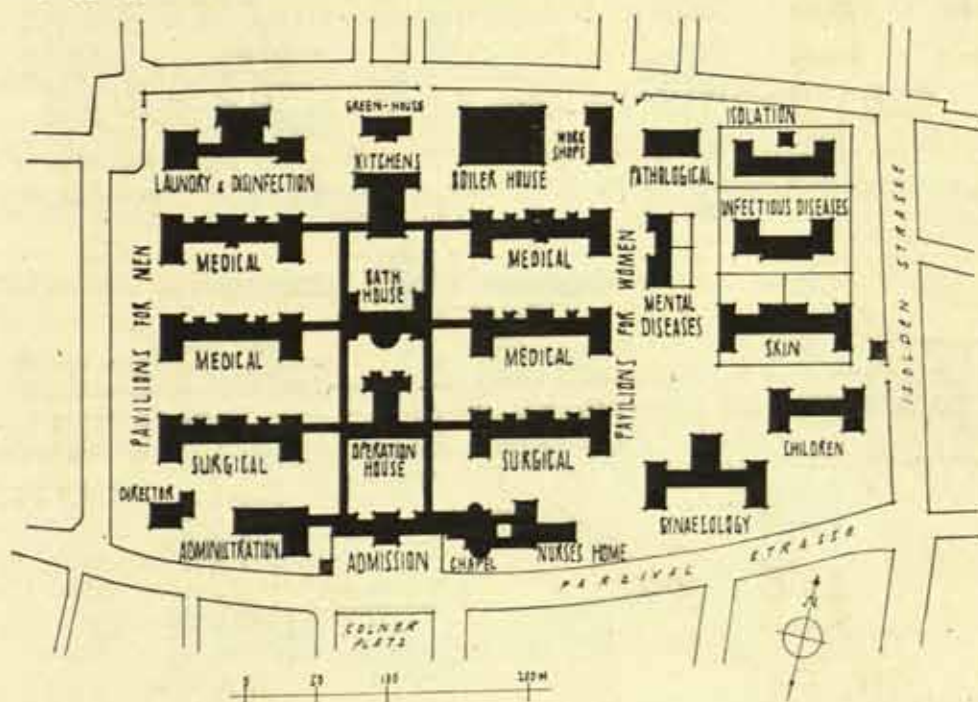


FIG. 14.—THE THIRD HOSPITAL, MUNICH: BLOCK PLAN. (Architect, Herr R. Schachner.)

The rebuilding of the Cook County Hospital at Chicago, now in course of construction, as a ten-story building, on the corridor type of plan, with projecting pavilion blocks, is a remarkable example of the multi-storied hospital, and some high hospital buildings now in course of construction at Detroit present many interesting features.

Canada possesses a number of interesting hospitals, notably the new general hospital at Toronto, in which the medical and surgical departments are planned on the group system, somewhat on the lines of the Glasgow hospitals, and I understand that Mexico also possesses some modern hospitals.

The large wards of the American hospitals usually contain about twenty-four beds, but in Chicago Dr. Ochsner strongly favours the six-bed ward as the maximum. The charge-nurse almost invariably has a desk in the large ward, at which she sits, and very elaborate systems of signal and call bells are provided. Of particular excellence are the luxurious pavilions for private patients and the nurses' homes, which in many cases remind one of first-class hotels. Many of the medical schools, as Harvard and Pennsylvania, possess admirable modern

buildings, and particular attention is now being given to the provision of buildings for the treatment and study of mental diseases. The ambulance services are particularly efficient,

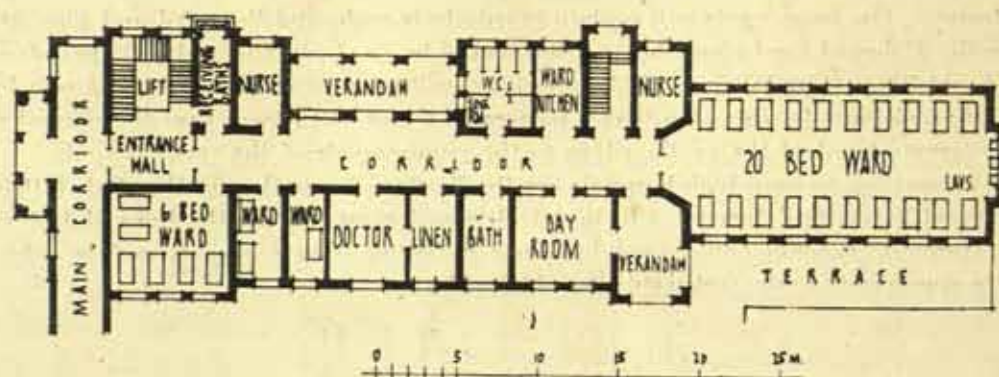


FIG. 15.—THE LINDENBERG HOSPITAL, COLOGNE: WARD UNIT. (Architect, Herr Kleefisch.)

and other details of interest are the excellent elevator services, and the incinerators or small destructors in each ward kitchen, in which all refuse is destroyed locally. Particular mention

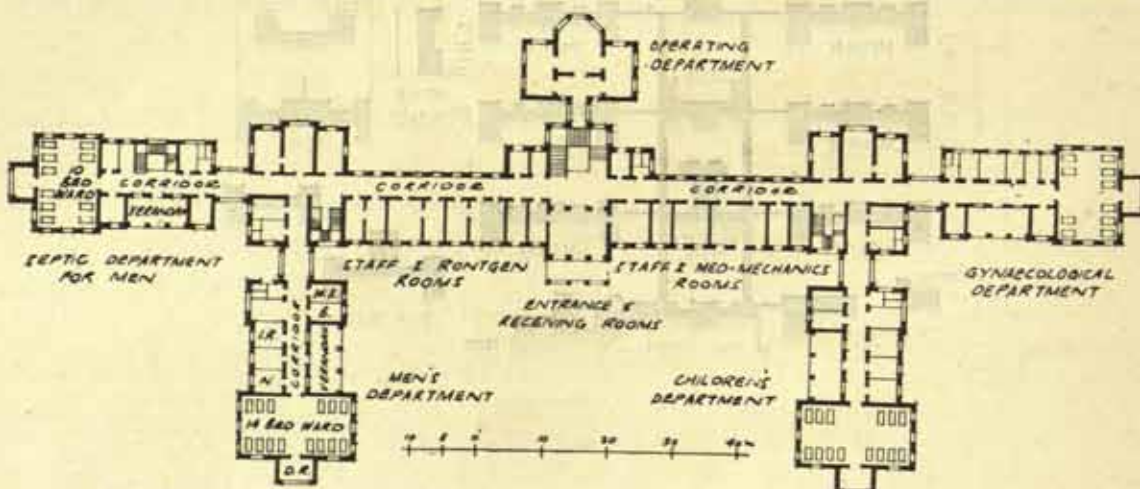


FIG. 16.—KARLSRUHE MUNICIPAL HOSPITAL: GROUND FLOOR PLAN OF THE SURGICAL DEPARTMENT

should be made of the very complete roof-wards and gardens, and the great provision of verandahs and balconies for outdoor treatment.

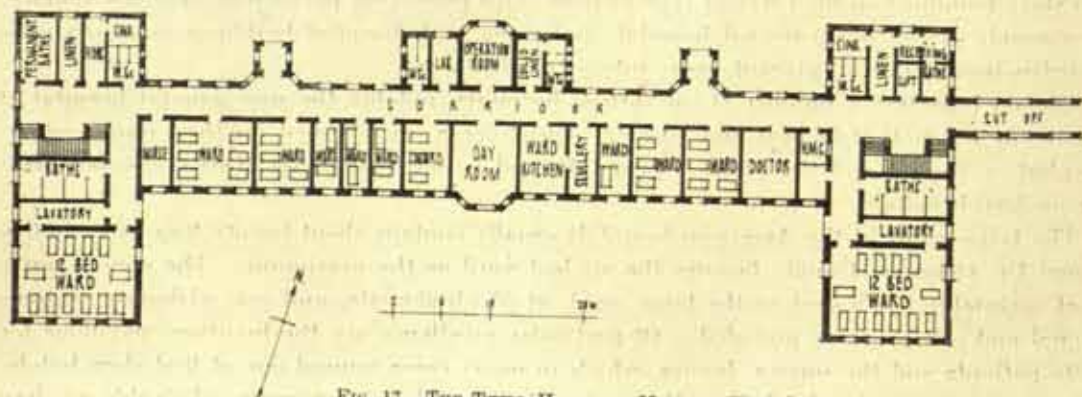


FIG. 17.—THE THIRD HOSPITAL, MUNICH: WARD UNIT.

Apart from the excellent materials and workmanship, and the highly imposing façades of many of the hospitals, there are not many constructional details of very great interest. The ward floors are usually of pitch-pine, with linoleum walking inlays, although the Cincinnati floors are of tiles. The sanitary annexes in their arrangement are often poor, the whole of the baths and sanitary apparatus being placed in one room and separated by partitions. Heating is central, the radiators in the wards being heated either by steam or hot water. A point of interest is that at the present time, although the majority of the hospitals in New York City

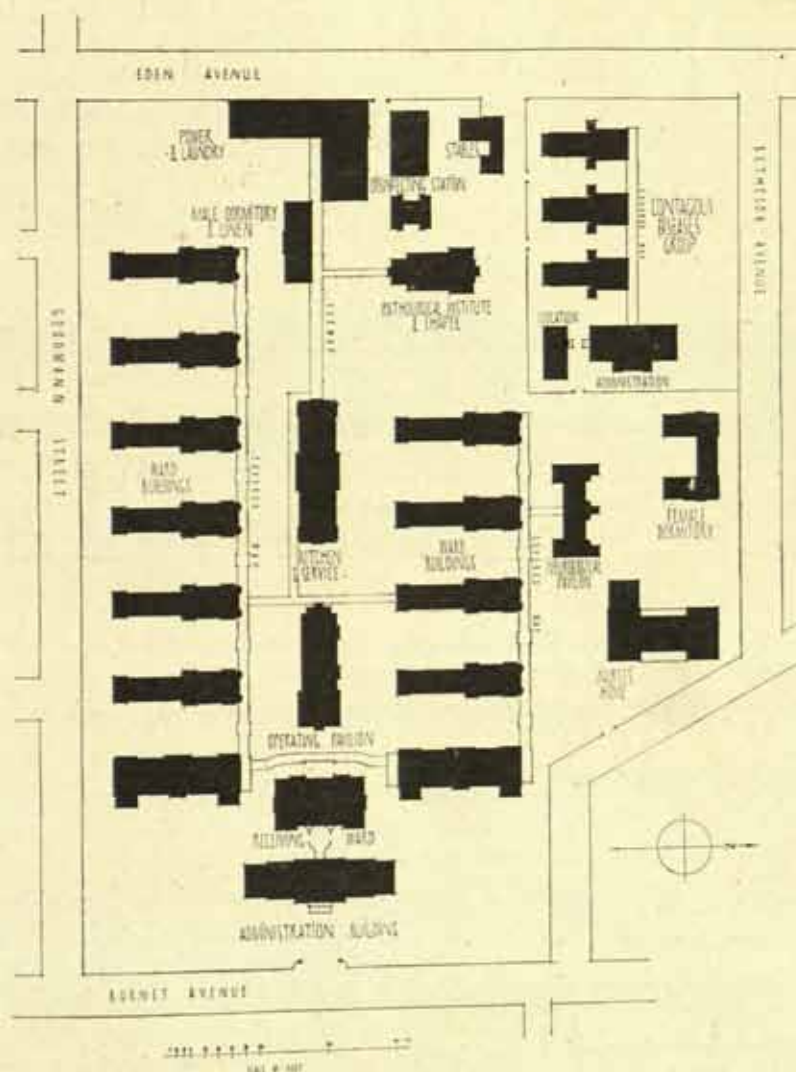


FIG. 18.—CINCINNATI GENERAL HOSPITAL: BLOCK PLAN. (Architects, Messrs. S. Harnsford & Sons.)

have provision for mechanical ventilation, none of them are utilising it to any great extent for their wards. Lighting is usually by electricity, upward reflectors being employed in the wards.

SOME CONCLUSIONS SUGGESTED BY A COMPARATIVE STUDY OF MODERN ENGLISH, CONTINENTAL, AND AMERICAN HOSPITAL CONSTRUCTION.

Having now attempted to outline briefly the characteristic features of the modern hospital of our own country, the Continent, and America, I propose to mention a few deductions

and conclusions which are suggested by a comparative study of the institutions of these countries. One must, of course, remember that, whilst considerable influence is exerted on the design by different localities and climates, the varying systems of maintenance and support, and the varying requirements of medical education, the central purpose of a hospital—the treatment of the sick—remains the same, no matter in whatever country or climate it may be situated.

When one compares the great pavilion hospitals of Germany and other countries with the majority of our own institutions, one is at once struck by the much greater size of the institutions of the former countries; by the entire disassociation of the kitchen and all service blocks from the administrative and patients' buildings; by the grouping of the patients' buildings into definite departments in accordance with the diseases; the reduction in the accommodation of the large ward, the number of special rooms in the ward unit, and the non-disconnection of the sanitary annexes; the much greater provision for special treatment in hydro-, electro-, and mechano-

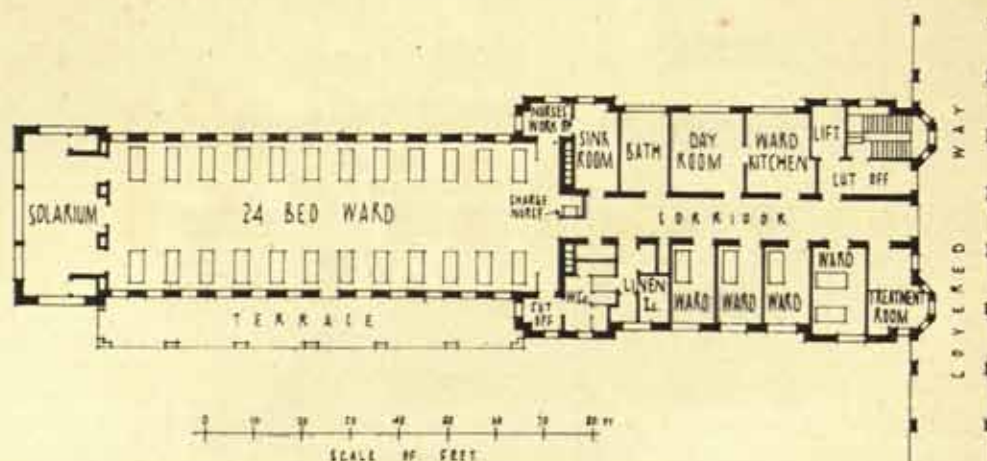


FIG. 19.—CINCINNATI GENERAL HOSPITAL: WARD UNIT PLAN.

therapeutics; the greater provision for scientific work, research, investigation, and pathology; the provision of balconies and roof-wards for outdoor treatment; the excellent sites, and the remarkable laying-out of the gardens and grounds.

It will be perceived that it is mainly the medical requirements and considerations which cause the majority of the differences in the grouping and planning of the buildings in the hospitals of other countries, in comparison with our own institutions; for there can be no question that, from the points of view of hygiene, sanitation, and construction, our hospitals are well up to, and very often excel, those of other countries. It thus really becomes more a question for the medical, rather than the architectural profession, to tell us whether, say, the typical German general hospital is or is not superior in its general arrangement and accommodation to our typical institution. Certainly the majority of foreign authorities and critics appear to consider that our typical general hospital, whilst possessing very many excellent points, is inclined to be somewhat stereotyped in its general arrangement and in the planning of the ward unit; but, on the other hand, there is a general opinion among foreign experts that our out-patient departments and our fever hospitals are superior to the majority of similar buildings in their own countries; and there can be very little question that we often excel in the internal design of our large wards, such as the relation of the beds to the windows, the floor and cubic space, &c.

As to the size of hospitals, I may say that there is a very general feeling in Germany that the total accommodation of one institution should not exceed 1,500 beds.

As to the disassociation of the kitchen and all service blocks from the administrative and patients' buildings, this is largely a question which depends on the size of the institution; for it is only, as a rule, in the larger Continental hospitals of four hundred beds and upwards that this arrangement is found.

As to the grouping of the patients' accommodation into separate departments for medical, surgical, and special diseases, which is invariably such a well-marked feature of the Continental institutions, I am of opinion that the system of organisation and management has considerable influence; but we, of course, possess in the new Manchester and Glasgow Royal Infirmarys, and in others of our institutions, some excellent examples of this grouping.

Then as to the height of hospital buildings, American and our own institutions show that

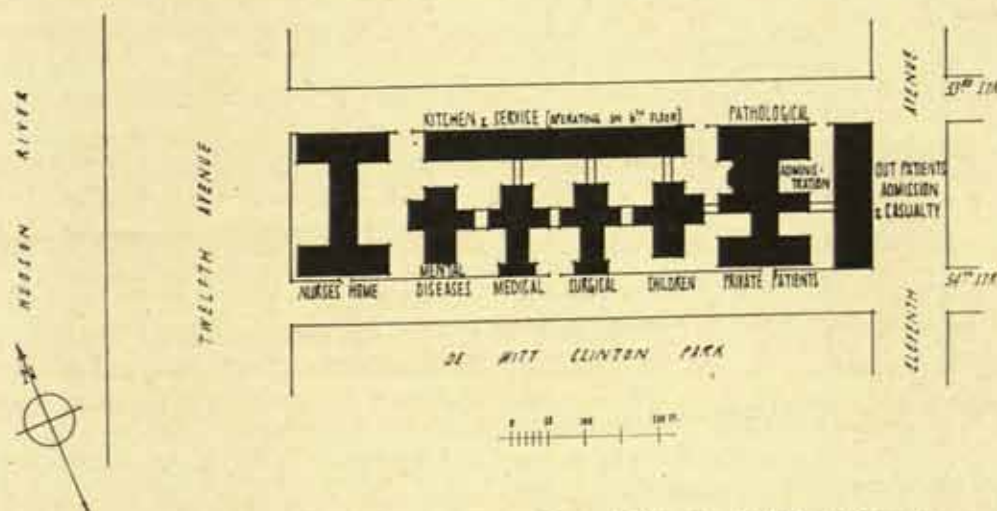


FIG. 20.—NEW YORK HOSPITAL: BLOCK PLAN. (Messrs. McKim, Mead & White, Architects.)

there is no objection to this type of construction in itself, but it appears to be generally agreed that the high hospital is only necessary where it is impossible to obtain other than a restricted site.

With regard to the differences that occur between the planning of our own and the Continental and American ward units, the tendency to decrease the size of the large ward, and to increase the size of the annexes, by providing a larger number of small wards for the purpose of classifying the individual patients and diseases both in the interests of the patients and of science, and also the provision of a greater number of rooms for special medical and service requirements, is one due almost entirely, I believe, to medical considerations. The ideal, I believe, which, however, from practical considerations is impossible, is a separate ward and nurse for each acute case; but we, too, are showing the tendency to decrease the accommodation of our large wards in such examples as Belfast Royal, Glasgow Royal, and Manchester Royal.

One point, however, in which our typical ward unit plans differ essentially from those of other countries is in the disconnection and planning of the sanitary annexes. One of the best-known American hospital authorities remarked to me that he considered our disconnecting lobbies were relics of the old earth-closet days; but, whilst there are undoubtedly certain points in favour of the disconnection of the sanitary annexes, I venture to think that at the

present day our typical ward unit plan with its twin sanitary towers at the south end of the large ward is one which can be modified with considerable advantage. In the first place, these projecting towers are usually so placed that they must deprive the large ward of a considerable amount of sunshine and air; secondly, for service considerations it is more desirable that these annexes be so situated that they can be utilised with equal facility from both the large and the small wards; and, thirdly, I do not know of any hygienic objection to the non-disconnection of the baths and lavatory, and if the sink-room and water-closets are well placed and properly ventilated, I am of opinion that there is very little objection to their non-disconnection, whilst,

on the other hand, there are very considerable advantages to be derived therefrom. This is a point to which I have always paid close attention in my examination of foreign hospitals, because with us, until recently, the disconnection of the sanitary annexes has been considered somewhat in the nature of an axiom; and I may say that whilst in Germany, as a rule, I have never noticed any objection to their non-disconnection, on the other hand in some hospitals in other countries where these rooms were badly placed there were many grave objections.

At the present time, however, we are inclined in our construction to depart from accepted types, which is well seen in the recent additions to Glasgow Western Infirmary, where the bath-room is brought into the main building; in the selected design in the recent competition for Bradford Royal Infirmary, where, in addition to the bath-room being brought into the main building, the sanitary tower containing the water-closets and sink-room is placed at the entrance end of the large ward; and, finally, in the design for the Chelsea

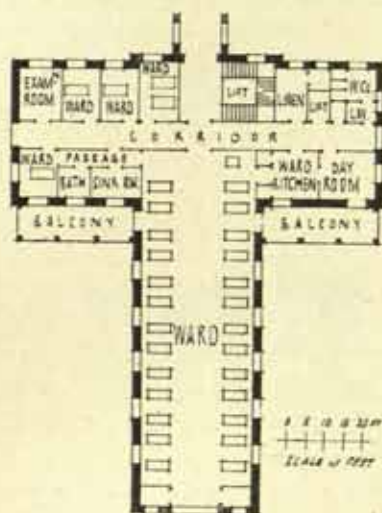


FIG. 21.—DESIGN FOR A WARD UNIT BY DR. S. S. GOLDWATER, NEW YORK.

Hospital for Women, where none of the sanitary annexes are disconnected.

This last is such a remarkable example for an English hospital that I recently wrote to Mr. Keith D. Young, the architect of the hospital, asking him for his opinion on this question, and he has very courteously permitted me to quote the following extract from his reply:—

" . . . I have gradually been coming to the conclusion that the disconnecting lobby is not a necessity. In the old days when sanitary plumbing was a lost art, or, rather, had not been developed, and fittings and connections and everything else were all of the crudest description, it no doubt was necessary to interpose a ventilated lobby between the sanitary offices and the ward; but now, with the almost perfection that sanitary work has got to, I see no real necessity for it. Moreover, you will find that wherever the lobby is provided the nurses invariably fix the doors open, and so render it of no effect. The practice has never been adopted in Continental hospitals to any extent, while in American hospitals, so far as I know, they depend very much upon their ventilation arrangements to prevent air passing from the sanitary offices to the wards. This, personally, I do not believe in a bit. I would not of course enter the sanitary offices direct from the wards, but it would be an immense help in planning if we could get rid of the projecting towers. Another point that I should like to make, although no doubt it has occurred to you, and that is putting the bath-rooms out in a projecting sanitary tower with a cross-ventilated lobby is nothing else than a blunder. A bath-room is not, of course, a sanitary office in the same way that a water-closet or a sink-room is, and the ventilated lobby may be a positive danger to a patient passing through it after having had his bath. In children's wards or children's hospitals I always arrange, if possible, that the bath-room shall be entered direct from the ward."

This opinion, coming from such an authority as Mr. Young, carries the greatest weight; and, as Mr. Young says, the abolition of the projecting towers would undoubtedly free us from restrictions in our planning, and give us much more freedom in our design. This is a question

which I think is well worthy of the most careful consideration and discussion by our hospital architects and authorities.

As to the greater provision in some of the Continental hospitals of rooms for special treatment and for educational and pathological work, this is, I think, purely a medical question, but Continental examples certainly afford us many valuable suggestions. Again, if in the future we have to build special pavilions for private patients, as seems probable, there are many suggestions to be obtained from Continental and American institutions.

There are numerous other suggestions in design, construction, heating, and ventilation, which one can obtain from a study of Continental and American hospitals, but I will not say more at the present time than to suggest that we might emulate the Germans in the provision of grounds and gardens. The value of environment as an important factor in the treatment of disease is, I believe, well recognised, and when one has seen the lay-out of the grounds and gardens in such hospitals as those at Berlin and Cologne, one cannot help but contrast them favourably with the majority of our own institutions. I am well aware, however, that the out-patient departments attached to our general hospitals necessitate the sites being in the centre rather than in the suburbs of our cities. I have always been struck by the fact that, as a rule, our Poor-Law infirmaries obtain excellent sites in the suburbs; and if, as seems probable, recent legislation is going to considerably affect our out-patient departments, we may hope that in the future our general hospitals may be able to obtain suburban and larger sites.

In concluding, I would take this opportunity of expressing my sincere thanks to the many architects who have so kindly assisted me and furnished me with plans and information, and to the very many members of the medical profession and to the staffs of the institutions which I have visited for their very kind assistance and courtesy.

DISCUSSION OF THE FOREGOING PAPERS.

MR. ALFRED W. S. CROSS, M.A. Cantab., *Vice-President*, in the Chair.

MR. EDWIN T. HALL [F.], in proposing the vote of thanks, said he did not think they had ever had at the Institute more interesting papers on so highly technical a subject. The wonderful display of hospitals on the Continent and in America which Mr. Milburn had given them was most educative. He could not pretend to criticise the designs, for it would take a month of Sundays to do so, and he would therefore confine his observations to general principles. For instance, with regard to the block plan of a hospital, it depended entirely upon the available site. If a considerable area of land could readily be had, naturally it was advisable to build one-storied pavilions. But they could not always afford to do that. If a hospital had to be built in a town where land was very expensive, the pavilions must be put relatively close together, and they must be more than one story in height. They would have to look upon that as a necessity. Plenty of air and plenty of sun were the main things to be provided. When that had been done, it did not matter much where the building was placed. On a town site, surrounded by roads, it was as good, from the aëration point of view, as if it were in the country. They wanted currents of air all round the building. The number

of beds per acre was not a proper standard, because if there were roads all round a site the area of those roads must be taken into consideration in dealing with the numbers per acre. In New York there was one hospital of 600 beds on four acres, that is, 150 to the acre; and though it was too closely packed they would get excellent results there if they kept their windows open and treated their patients, so to speak, in the open air. At Manchester they had 600 beds on thirteen acres, and that gave the ideal Mr. Snell contended for, of fifty beds to the acre. The Nouvelle Pitié Hospital in Paris had sixty-six beds to the acre, and at Cincinnati there were 1,400 beds on twenty-seven acres, which was about fifty-two per acre. In the case of a high building in towns, there must be plenty of open space about it. He had himself put up a building right in the heart of London—viz., the wing of the Homœopathic Hospital. There was a space of 180 feet between the building and the houses on the opposite side of the street, and it was 120 feet to the nearest building in a straight line in another direction. The building was seven stories in height, yet it was as well aërated as if it were in the country. Mr. Pite, at King's College Hospital, had got roads on two or three sides, and

open land close by, so that there was plenty of air to his site. In University College Hospital there was a great deal of air by reason of its shape and because it was surrounded by roads. With regard to interspacing, that again depended upon the openness of the country around. At the Rixdorf Hospital, there was 66 feet space between the wards, at Johns Hopkins 60 feet, at New York 55 feet, at Manchester 65 feet, and at Camberwell 90 feet. The sites were so open that they gave ample and splendid aëration. At Manchester there was an angle of 25 degrees of light to the lowest window cills, and to the lowest window cills in the three-storied buildings there was an angle of 37 degrees, which was satisfactory. With regard to the unit principle, this meant that in a large hospital one surgeon with his assistant would have one division of the hospital, consisting of a certain number of beds for women and a certain number for men, and the theatre and all apparatus rooms necessary for that division. The unit was, to all intents and purposes, a separate hospital within a hospital. This applied also to the medical side. If the building must be of more than one story, the staircases ought not to communicate between the various floors so that the foul air from the lower one would ascend into the wards above. In Manchester there were only two staircases for the whole main hospital, and they were away from the wards, and were connected by glass-covered ways from end to end. It was suggested in some of the American hospitals that they should lodge the resident medical officer in the units. He did not think English doctors would approve of that; they might as well arrange for the nurses to lodge over the wards; when the doctor was off duty he should be away where he could get refreshment for his mind. This was not specially a medical question, but rather one of common sense. With regard to the pavilion *versus* the corridor principle, slides had been shown of modern hospitals in Germany where the corridor principle was adopted. This, after all, was only a reversion to what had been done here thirty or forty years ago, and longer. To show how wasteful it was, he had measured up a few of these corridors. In Munich No. III. Hospital there were 170 feet run of corridor, 10 feet wide, and thirty beds. That meant for every bed in the hospital 5 feet 6 inches run of corridor. Cincinnati on the pavilion principle, 70 feet to 29, which was only 2 feet 4 inches per bed. At the Camberwell Hospital they had 44 feet for thirty-six beds, which was only 1 foot 3 inches of corridor per bed. At Leeds Hospital there were 16 feet to thirty beds, or only 6 inches per bed. The question of cost was a very important matter in hospitals, therefore the pavilion principle was far cheaper, and from the point of view of efficacy he suggested it was better, because with buildings on the corridor system they only got the sun from one side—generally the south—which meant that sunshine was in the ward

only for a certain number of hours each day. But with the pavilions placed north and south the sun, from its earliest rising to its setting, was on the big ward; it went round it. Therefore there was more sunlight to a large ward on the pavilion than on the corridor principle. As to the number of beds in a ward, Mr. Milburn said that one of the American doctors suggested a six-bed as the ideal sized ward, and he had shown German wards with twelve beds. That was all very well, but the nursing cost was so great that he doubted very much if the doctors would say they could afford such expensive hospitals. We in England had from twelve to sixteen and even twenty-four beds, and in some of the older types there were twenty-eight beds in the biggest wards. What he thought was the best system was having a large ward and three or four smaller wards attached, so that the patients might be separated. At Manchester in a pavilion they had sixteen to twenty-four beds in the largest wards, and there were two-bed wards and four-bed wards. Mr. Pite at King's College Hospital had an arrangement something like that. In the Johns Hopkins Hospital there were twenty-four beds in the big wards, and they had two private wards which were a long way off. Our modern infirmaries were greatly in advance of the old Poor-Law buildings, and corresponded very much with the German buildings. At Camberwell they had one twenty-four-bed ward, one two-bed, one four-bed, and one six-bed ward as the unit; and that was served by one staircase. For the past ten years we had had roof gardens in English hospitals, and patients doing well on them, and he showed a photo of one of his own so treated. So that was not an American idea. The position of the sanitary towers depended on the site and the arrangement of the wards. In the case of one big ward, with a single isolation ward of two beds, a very useful position was at the extreme end. But in the case of several small wards the towers should be kept at the home end. In some of our own hospitals, as at Manchester, for instance, they had them at the end. At Leeds they had them at the end because the big ward was practically the only ward. At Camberwell they had them right in the centre; the towers were at the home end of the big wards. It all depended on how they were arranging the plan. It was suggested that these sanitary towers were undesirable. With regard to the bathroom, he agreed there was no great importance in that. But as to the closets and sink-rooms, he strongly deprecated any idea of their being placed directly opening either out of the ward or out of an enclosed corridor immediately on the ward. These apparatus sometimes got out of order, and he felt sure that medical officers of health would agree with that view, as did most of the architects with whom he had discussed it. In the Cologne hospital the closets were next door to the ward kitchen, their windows being on the

same plane. If there was a sluggish atmosphere, the foul air from the water-closet would be drawn by the superior warmth of the kitchen into the kitchen window, and he could not imagine a more insanitary condition. With regard to the position of the sanitary towers, in the Moses Taylor, Pennsylvania, the tower was in the centre, and at the new Bradford it was in the centre. But hospitals with end towers existed all over the country. At the Royal Derby, designed by Mr. Keith Young, which he had always looked upon as an excellent hospital, they were at the extreme end, and so they were at Rio Tinto, Teheran, Edinburgh, and other places. In Germany all the best and most modern hospitals had detached towers. It was only in the hygienically more backward hospitals that water-closets were otherwise placed. He had discussed this matter with the doctors of the hospitals where this occurred and found that they objected to the arrangement in the highest degree. One great new hospital close to Munich had four or six closets in a room, and one window only, and that in the heart of the place. In Nuremberg, one of the finest hospitals he had seen, they did not have a little cut-off, as we do; they had a great ante-room, with windows blowing right through, out of which the closets are entered. In some of the places in Munich, and in Dr. Goldwater's, one had to walk from the ward across the main corridor, which was very long and very draughty, with open staircases. Every patient from every ward had to go across this corridor to get to the water-closet. It was not private, and therefore not nice for the patients themselves. As to the disconnection of pavilions, the Germans used to have them absolutely disconnected, but he was glad to hear from Mr. Milburn that now they were connecting them by corridors. He thought it was a mistake to have enclosed corridors; they should be covered open ways, which was a fair compromise between the two. The tendency in England was to cut down the cost of hospitals, and as hospitals might presently come under either Government or municipal control it would be necessary to cut down the cost. The best way to do that was to cut down the cube given to each bed. Dr. Boobyer had been nursing patients with all kinds of diseases in spaces which came to something like a thousand cubic feet for each. At the Pasteur Hospital in Paris, the cubicles, in which they had all kinds of infectious diseases, were 10 feet by 8 feet only, that is, 80 feet super and 1,000 or rather more cubic feet. Under the modern system of treatment in the open air the windows were kept wide open, and a large cubicle was not necessary. Only sufficient room was wanted for the doctor and nurse to be able to move about. It was in that way, he thought, that they would have to reduce hospital cost.

DR. PHILIP BOOBYER, Medical Officer of Health, Nottingham, rose at the instance of the

Chairman to second the vote of thanks. He had listened, he said, with pleasure and profit to the reading of both papers, which teemed with information invaluable to persons like himself. Under ordinary circumstances he would have felt disposed to follow the authors at some length in discussing several of the more important questions they had raised in the wide fields they had each of them traversed, but as the hour was so late he proposed to confine his remark to one topic alone—viz., that of fresh-air and open-air treatment. People like himself responsible for the management of large isolation hospitals had been much exercised in recent years with the necessity of reducing to a minimum the obvious disadvantages attendant upon the aggregation of all types of cases of acute specific diseases at various stages in large common wards at the same time. Various solutions of the problem here presented had been suggested. Attempts had been made to separate the cases according to type or stage, but such expedients were alike impracticable and undesirable. It was obviously bad practice, for example, to aggregate together acute, severe, and septic cases in common wards. Small separate (box) wards for individual cases, like those of the Pasteur Hospital (with nursing methods similar to those of the Barrier System), had been advocated and tried, but, while such a method was practicable for an exemplary establishment like the Pasteur Institute, it was unworkable in ordinary isolation hospitals like those of our own provinces, where expense was of first consideration, and the numbers of cases to be dealt with continually fluctuating widely. In his own hospitals he had endeavoured to solve the difficulty by fresh-air treatment. This had been provided by free ventilation through open doors, windows, etc., in the first instance, and by actual open-air conditions later. Some eighteen years ago he had nursed acute and severe cases of pneumonia, scarlet fever, and small-pox in the open air, in freely ventilated corridors, or in bell tents with raised curtains, and with the best results, and the practice or experiment had been continued upon an ever-increasing scale down to the present time, when, so far as his own district was concerned, it was regarded as a perfectly orthodox and desirable method of treatment. In persuading the nursing staff to abandon their time-honoured belief in the necessity of a high temperature for the ward atmosphere in cold weather he had to overcome considerable prejudice. But this belief once abandoned, together with all attempts to live the dual life of in- and out-door plants at one time, the transition from the freely cross-ventilated ward to the open verandah was rapid and easy. The principal isolation hospital of Nottingham was made up of widely separated single-storied pavilions communicating with one another by means of cross-ventilated corridors several hundreds of yards long, with frequent openings for roadways. These corridors

were used during many years for the accommodation of cases of various kinds, and had proved highly serviceable as observation wards for doubtful cases or as special isolation wards for cases of incidental diseases. The discomfort from draughts in these corridors had been obviated by screens; nothing but the draughts had ever been complained of, and the patients so nursed had done better than those in the closed wards. Of late years, all sorts and conditions of patients had been nursed in the open air on verandahs attached to the sides of the pavilions. The first of these permanent verandahs was erected in 1903, the latest only a few months ago. In March 1911 Dr. Franklin Parsons, Second Medical Officer of the Local Government Board, visited and inspected the principal Nottingham isolation hospital at which this open-air treatment had been carried out, and after a careful inquiry and examination of cases and records stated in his report to the Board (published in 1912) that he had not seen or heard in the course of his inquiry anything inconsistent with his (Dr. Boobyer's) statements respecting the favourable effect of open-air treatment upon all classes of cases. He also expressed concurrence with Dr. Boobyer's view that the heat-controlling centre of our human mechanism is capable, even in disease, with adequate food and clothing, of adjustment to wide variations of external temperature. In health we know that such adjustment occurs. The late Captain Scott and other Arctic and Antarctic explorers had recorded, indeed, that after an experience of low minus-temperatures, they and their companions had felt comparatively warm and comfortable with the temperature oscillating just above and below freezing point. On Wednesday last a large number of members of the Society of Medical Officers of Health, and members of Local Authorities, visited the hospital with the view of inspecting the open-air system at work and obtaining information concerning it. They and others who had visited the Nottingham Hospital singly or in small parties during recent years had also expressed themselves as satisfied that the claims made for this system were justified by facts. One of the most remarkable facts about it was this—that many of those diseases for which a warm, still, atmosphere was usually said to be necessary, *e.g.*, nephritis, lobar pneumonia, and catarrhal pneumonia after measles and whooping-cough, did better in the open air than in the wards. He (Dr. Boobyer) should not soon forget the joy and gratitude of an American gentleman and his wife, from Los Angeles, in 1906, at the recovery of their only child from an attack of scarlatina-anginosa, contracted in a Nottingham hotel where the patients were staying in the course of their travels. His friends Drs. W. B. Ransom and S. E. Gill of Nottingham called him to see the case with them, and he advised open-air treatment at the isolation hospital. This was agreed to by the parents, and

carried out consistently during three months of a fairly hard winter; and the child made a perfect recovery, with no complications, excepting an ear discharge, which ultimately cleared up completely with the preservation of normal hearing. He did not expect this child to recover, and he certainly did not think it would have done so if nursed inside the hospital. There was plenty of incidental evidence in favour of open-air treatment. He might remind them that Mr. Saxon Snell had given them a good account of *al fresco* hospitals that evening; Defoe, in his History of the Plague two hundred years ago, had done the same; and we had the whole of the present-day sanatorium movement to the same effect. Fresh air as a potent factor in medical treatment had come to stay, and we must modify our designs of hospitals—and houses—to meet its advent. So far as the treatment of acute specific fevers in the open air was concerned, the first thing they had to do was to show that it did no harm. This, he thought, they had done. If it could be further shown to be of definite benefit in certain cases, he thought, to say the least, that enough had been shown to justify its further trial.

MR. STANLEY BOYD, M.B., Senior Surgeon Charing Cross Hospital, said he agreed almost entirely with Mr. Hall's remarks; but he could not go so far with him as to say that piling up wards one upon another had no ill effect. He thought that the number of flats which were being run up in London did not tend to the greater health of the community. At the same time, statistics showed that we did not pay very heavily for it, and in the case of hospitals there was absolute necessity for this class of building. It was obvious that the air would rise from ward to ward, and even in the country he supposed the top ward would have air more like that of a city than would the lowest. He was much interested in what was said about the covered ways, not enclosed ways. Could they get nurses to work them? Mr. Snell would remember that he (Mr. Boyd) had brought to Charing Cross Hospital from the Paddington Green Children's Hospital the idea of an isolation department which lay entirely above the hospital and was worked by an outside lift. It was built on the model of a house in the Königstrasse in Nuremberg, and contained four rooms for nursing separate suspected diseases, and the nurses could meet only in covered balconies, but wind and rain necessitated the enclosing of these ways. At Charing Cross Hospital the floors were isolated from one another. There was a central staircase with lifts, connected with each floor by flying bridges with louvres which could not, and with windows which should not, be closed. That was the most they could do in regard to covered ways. He was very much interested in the photographs of the operating theatres which Mr. Milburn showed them as installed in some of the German hospitals. He had recently sketched a theatre for a provincial

hospital, but it was too advanced for the committee. One of the most important things for a surgeon in his work was light. They could get most light in the open air, but they could not work there; therefore he suggested a greenhouse. That was all very well if they could heat it and have blinds without dust. So he suggested two greenhouses with a space between them for heating, blinds, etc. The photographs Mr. Milburn had shown were splendid looked at from behind; but there was a wall which one was looking from, and that wall would often be the very place from which light was wanted. He had been greatly hampered by the fact that there was a wall behind him from which insufficient light was reflected. If they had a double-greenhouse theatre connected with the building by a low corridor, light could be got fairly well all round. With regard to heating, in the Charing Cross out-patient department and theatre they had a large amount of glass; the whole roof of the out-patient consulting rooms was of glass, and he had never had complaint of cold air or of moisture falling on their heads. The explanation of that was simple. There was a steam-pipe carried all the way round the bottom of the roof, which kept the glass hotter than the rest of the theatre; hence no condensation took place upon it. A good deal had been said about the need for cross-ventilation as a cut-off for the sanitary towers. It was required because their walls were thin, they got very cold, and the cold air from them rushed into the wards. If the sanitary towers were kept the warmest places, the ventilation currents would be all the other way. He preferred cross-ventilation, but even this should go towards the towers. Admittedly sewer-gas was not a pleasant thing, but it was not so desperately poisonous as was thought. It did not contain micro-organisms.

MR. PAUL WATERHOUSE [F.] writes:—

Lack of time prevented me, and many others, from joining in the expression of thanks for the two excellent papers contributed by Mr. Saxon Snell and Mr. Milburn. I should like to offer some acknowledgment of these valuable additions to the history of hospital design and to make some observations which it was not possible to make at the meeting.

Even during the twenty-five years of my own experience as an architect very notable changes of medical opinion have influenced hospital design. One of the greatest of these relates to operating theatres. At the time when, in 1885, my late father, Alfred Waterhouse, R.A., designed the Royal Infirmary at Liverpool it was still considered desirable to give accommodation for a large number of student spectators. In 1903, the more modern notions took effect and it fell to my lot to place two theatres upon a space rather less than that occupied by one of the original operating rooms! The older fashion in theatre construction was indeed a strange enemy to antiseptic surgery. The vast floor spaces of the stepped galleries offered a

huge uncleanable surface for the harbouring of germs.

Not always have the changes of opinion been in a forward direction. When University College Hospital was first schemed it was decided as a cardinal proposition that the four radiating ward-wings were to be connected to the central block by definitely open-air bridges, and the same arrangement was to prevail at the connections between the wards and the sanitary towers. But before the building was finished it was decided that the nursing staff could not live up to this hardy ideal, and the bridges were closed in with screens and windows, which partially diminish the value of the system. The "cut-off," as a separation between the wards and those departments that require drainage, has been until recently the key to modern hospital planning in England, but it seems that in this matter we are lessening the stringency of theory. Not so many years ago a well-known surgeon in the north of England went the length of saying that he would never perform an operation within reach of any waste-pipe, however innocent. But the gradual realisation of the fact that the value of doctors' and surgeons' ablutions entirely outweighs the hypothetical danger of well-trapped wastes has changed all that, and washhand basins are now essential features both in wards and operating rooms. The relaxation of theory which now permits even w.c. blocks to adjoin ward buildings without cut-off ventilation appears to me at least hazardous; but there is much to be said for the desirability of placing such accommodation in such a position as to serve the small wards of the unit as well as the large ward.

A most important step in our modern practice relates to the proper isolation of out-patient departments. It is realised, I believe—and the two Papers have emphasised this—that the undue proximity of the out-patient block to the wards has greater danger than the proximity of the sanitary accommodation; and it seems likely that on town sites, where ideal conditions of disposition are impracticable, there is a proper use in this connection for the much-discredited systems of mechanical ventilation. If there is a function for the plenum system, it is undoubtedly for the forcible ventilation of an out-patient block on a constricted site; but even for such a purpose extraction by mechanical means is probably better than mechanical impulsion of air.

Books Received.

- The Art of Colour Decoration. By John D. Crace, F.S.A. [Hon. A.]. With Facsimiles of Coloured Drawings by the Author and other illustrations. 4s. Lond. 1913. 80s. net. [B. T. Batsford.]
- On and along the Thames, James I. 1603-1625. By W. Culling Gaze. 8s. Lond. 1913. 10s. 6d. net. [Jarrold & Sons, 10 Warwick Lane, E.C.]
- Cassell's Reinforced Concrete. Edited by Bernard E. Jones. Illustrated by 171 photographs, and about 600 diagrams and working drawings. 4s. Lond. 1913. 15s. net. [Cassell & Co., Ltd.]

REPORT OF THE HOUSES OF LAYMEN AND CONVOCATION ON THE INSURANCE OF ECCLESIASTICAL BUILDINGS, 1913.

AT a meeting of the Representative Church Council held at the end of 1911, the Archbishop of Canterbury proposed a resolution, which was carried unanimously, as to the urgent necessity of a Special Committee being appointed by both Convocation and the Houses of Laymen to report forthwith upon the better Insurance of Ecclesiastical Buildings.

In conformity with this reference a Joint Committee was subsequently elected representing the Lower House of Convocation and the Houses of Laymen for the Provinces of Canterbury and York, with power to deal with this question and take evidence thereon.

The Report of this Joint Committee has now been confirmed by the Canterbury House of Laymen at the Session held on Wednesday, February 19 last, omitting, however, the final recommendation as to insurance endowment funds in commemoration of the dead by way of memorial insurance for parochial endowment.

Before giving an epitome of what has thus far in this way been decided upon as the concrete results of this timely and comprehensive inquiry on the part of the Church authorities, episcopal, clerical, and lay, it will be pertinent to mention, in parentheses, to what precise extent the Royal Institute of British Architects has already incurred an obligation in this matter. On its merits the project for the more adequate protection of ancient buildings from fire would at any time claim the moral support and active co-operation of the members of the Institute; and certainly diocesan, parochial, and other bodies charged with the responsibility of maintaining old churches and other examples of architectural importance throughout the Empire, can always rely upon the willingness of the Institute to second, to the best of its ability, any well-considered efforts with that end, such as those comprised in the Report due to the decision of the Representative Church Council to which reference is here made.

This co-operation on the part of the Institute on the present occasion is obviously more imperative inasmuch as the initial stage of this movement originated in the action taken by the Council when, on my suggestion about two years ago, it was unanimously resolved to issue a circular on the subject to all Archdeacons of the Anglican Church and other ecclesiastical authorities in England and Wales, Scotland, and Ireland, emphasising the importance of effecting more adequate insurances against fire on all ecclesiastical fabrics, as well as on the furniture or fittings of churches and their ornaments and decorative accessories.*

* JOURNAL R.I.B.A., 11 Nov. 1911, p. 22.

Public attention thus has been directed to a matter which is of no small moment from many points of view, and we are able to welcome this capital Report which has now been officially adopted. The practical question still remains to be dealt with as to how far pressure can be brought to bear on parochial authorities to induce them to make more commensurate provision by better insurances.

Architects, no doubt, can in a variety of ways assist the betterment of things in this respect by recommending their clients to reconsider their existing policies and to augment the amounts, all too limited hitherto in extent. Advice dealing with such details must, however, be made subject to the proviso as to the proportionate values of risks being made conformable with the policies on which premiums are paid, care being exercised at the same time not to incur a needless increase on the cost of current expenses.

No general rule can be advisedly laid down for general adoption as to the respective sums to be allocated in relation to the original cost of buildings or as to the precise value of their contents, and it certainly is not the business of the Institute to attempt any schedule of the kind. Each case, in fact, must be individually dealt with on its own merits, and invariably it will be found essential to consider the age and construction of the fabric, its structural conditions, its position and surroundings, and many other points such as can only be judged and decided on after a careful survey on the spot. These considerations in the first instance must be reckoned to be quite irrespective of the terms of any policy and independent of this or that particular insurance office, mutual, co-operative, or otherwise. Well-considered and efficient provisions for protection against fire are also pre-eminently important and can scarcely be overestimated, though very often they are entirely neglected.

Turning now to the Committee's Report, we find it almost starts with this headline question—"What is an adequate insurance of a church?" And by way of reply we learn that "as a general rule the fabrics and furniture of churches ought to be insured for the full amount which it would cost to reinstate them in case of destruction." That is a sound piece of advice, but as to how far walls left standing more or less intact will prove sufficiently good for retention opinions will differ, and the Report appears to assume that the walls are of brick, and nothing is said about old stone walls which possibly might be saved as work of architectural historic importance. As such, as a matter of fact, they will have been insured, though it may be fair to say that no insurance could cover the reinstatement of antiquity. On the other hand, provision should be made to go a long way towards the retention of antiquarian walling. Brick-work stands fire better than any other material, and, with this seemingly in mind, the Report

states that experience shows that the combined heat within, and the application of water from the outside in efforts to extinguish the fire, particularly if severe frost happens to follow, necessitates the removal of such brick walling even if it be not actually cracked and twisted. This must be done before rebuilding can be begun, so that, in such circumstances, so far from being an asset of value after the fire the walls become actually a source of expense. Those who have had to settle losses of this kind will confirm much that the Committee has here urged, but the main value of this part of the Report is comprised in the section where it emphasises the need of expert knowledge being obtained, and this should happen not only when the assessors have to settle the value of the loss and methods of rebuilding, but also an expert architect ought to be consulted at the outset when the insurance is effected and when provisions as to precautions to prevent fires are decided on and adopted.

The Committee strongly assert that no policy of an ecclesiastical building should contain an "average clause," and there can be no question as to the rightness of this rule.

It is also essential that the furniture and ornaments of a church should be clearly described in agreed terms, and each article should be sufficiently particularised for identification, while all these things should be insured apart from the fabric, every piece of importance having a value allocated to it by a regular schedule, and this list should be attached to the policy. This point is not quite so clearly insisted upon as perhaps it might have been. Already the Archdeacon has power to oblige the churchwardens to keep a proper schedule of all ornaments, vestments, and plate existing from time to time in every parish church, and in the Easter presentments such a list is mentioned in the series of questions to which replies are required.

In addition to the actual building risk and the covering of its contents by adequate insurance, the Report, with wise forethought, suggests that provision should be made to include architect's professional fees and other like charges, as well as the clerk of works' wages incurred in connection with the rebuilding or restorations brought about by fire. Moreover, the expense of providing a temporary building such as an iron church, in which services can be held while the damaged parish church is being reinstated, ought to be included in the insurance, together with a year's rent of sittings, too, where the income is derived by letting pews. The probable loss accruing meanwhile, in any case, in consequence of diminished church collections, should likewise be foreseen and taken into account, because current expenses will go on.

Ample reasons are set forth in the Report as to glebe buildings being insured to their full value by the incumbent, and parsonages are dealt with most

usefully with reference to Ecclesiastical Dilapidations Acts and the liabilities of the clergy in a personal sense in these matters. The Bill drafted two years ago contains provisions for the compulsory insurance of the buildings of a benefice for an adequate sum to reinstate them if destroyed by fire, and it is added that these insurances ought not to be effected solely in the personal name of the incumbent.

The House of Laymen by the adoption of this Report has realised the need therein defined of persistent action by all Archdeacons and Rural Deans in calling the attention of churchwardens to their obligations in this question of insurance, and the Report urges upon these diocesan dignitaries their official responsibility, by making periodically personal inspection of all churches, to undertake this part of their work more systematically than has hitherto been attempted save perhaps in exceptional instances.

Visitation charges and Ruridecanal conferences are alluded to as another means of bringing pressure to bear upon parochial officials whose buildings may happen to be under-insured. A permanent committee charged with the duty of inquiring into and looking after all the parochial insurances in the deanery is suggested by the Report as an additional method for bringing about an improvement. Such a body, however, could have no legal authority, and it is probable that any such concerted action would be resented strongly as being too inquisitorial, and so more harm than good might result; whereas the official status of Archdeacons has to be reckoned with, particularly when their duties are carried out in concert with the Rural Deans acting in conjunction with the Bishops.

Ultimately no doubt the pressure of public opinion will be brought to bear, and in all likelihood the laity may have to follow the matter up through Easter vestries and parochial church councils. The incumbent and churchwardens conjointly remain, meanwhile, the only legally responsible persons in each parish, and, except where the incumbent is the Rector, the actual holders, collegiate or otherwise, or the lay impropiators of the rectorial rights derived from old ecclesiastical foundations are liable for the upkeep of the chancel.

The Report does not evade the question of aid to poor parishes in relation to the expense of insurance, but it is scarcely requisite to go into that problem here. The exigency of extraneous aid cannot, of course, be ignored, where a needy agricultural parish, for example, with a sparsely scattered population is weighted with the responsibility of maintaining some splendid mediæval church or choice specimen of historic architecture, because it would be folly to expect such a poor community to insure without diocesan or other help a continuous insurance for the full sum required to reinstate such a building with its excess of accommodation for local contemporary needs

as a place of worship. The difficulty underlying the problem as a whole is not, however, so much a matter of annual costs consequent upon more adequate insurances, for they are relatively infinitesimal. The crux consists rather in the fundamental principle of the whole question, and with this aspect the Report is comprehended under the paragraph headed by this interrogatory—"What help can be given to enable parochial authorities to estimate the value of their buildings, and to find out whether they are protected against important risks under their existing policies?" By way of an answer to this very pertinent inquiry, the Committee say that "local qualified professional advice should be obtained, as to the cost of reinstatement," and as to the adequacy of existing policies Archdeacons and Rural Deans might advantageously be consulted.

Insurance offices, we are reminded in this Report, are quite ready to give free expert advice on these points without making any charges for their surveyor's fees and expenses. This, no doubt, is true enough, but, valuable as such information may be, the inherent difficulty ought to be met in a more businesslike fashion, which, to state the matter plainly, means the necessity of an absolutely impartial and independent survey dealing with the premises structurally and thoroughly. Where historic buildings are concerned, the need for such an expert survey is manifestly most imperative as the only workmanlike way of treating the matter.

The Report therefore rests on truer ground when it recommends incumbents and churchwardens to seek advice from a qualified surveyor, who, it should be added, ought also to be a qualified architect of experience in church work, and, by preference, someone ecclesiastically informed.

The risks of over-insurance are mentioned by the Committee, who, properly enough, point out that the sum legally claimable under a fire insurance on any building destroyed by fire is the cash value of the building immediately before the fire took place not exceeding the sum insured. A fire insurance is, in fact, a contract of indemnity against actual damage that may arise, and it is nothing more. "Both carelessness and fraud would be encouraged if people were allowed to insure their property for more than its value." On the other hand, it must be borne in mind that the rising cost of building of all kinds in consequence of greater taxation, enhanced price of materials, and reduced amount of labour rendered per hour, much less than that which prevailed a few years ago, renders it obligatory to maintain fully the standard of risks by insurance, and the cost of reinstatement is not in the least likely to be reduced in the future.

It is not intended here to follow the Report as to the best office in which to effect insurances. Co-operative schemes have their own advantages doubtless, but the questions of insurance risks and the amount of premiums payable ought to be

settled on their own merits, and quite apart from incidental or ulterior gains or even return of profits, unless the reduction of the yearly premiums themselves is in question, whereby the insurer might obtain the available advantage.

Burglary insurance and workmen's compensation are both mentioned in the Report. Risk from theft in a church kept open for private prayer, or larceny from the vestry or sacristy, unless accompanied by forcible entry so as to qualify the deed as burglary, would not be insured against by any ordinary policy. This fact is worthy of mention here, as few possibly may know about it.

The Report closes with some wholesome advice as to the desirability of periodical qualified inspection of the heating apparatus and of the installation of electric and other lighting, and especially on the alteration or introduction of such installations. Nothing is said about flues, though possibly this is implied, for these particular recommendations generally closely follow the lines of the Institute's own circular. The risks of imperfect lightning conductors are frequently a source of danger when their overhauling is not occasionally attended to. Hydrants are pronounced by the Committee to be always essential. Of course, in remote country parishes such a rule would need modification. Means of communication with the nearest fire-station, where any exists, should, no doubt, be arranged, and the location of the nearest call-box to the church ought to be plainly stated on the church notice-board or some conspicuous place near the main church entrance.

This Report's success, we understand, was largely due to the leadership of the Archdeacon of St. Albans, the Rev. Kenneth F. Gibbs, of Aldenham, the Archdeacons of Birmingham, Maidstone, and Exeter, also Chancellor P. V. Smith. The document was presented by the Chairman, Mr. T. G. Hughes, who signed the Report. He also gave special attention to the matter throughout. "The thing is to prevent the Report becoming a dead letter."

MAURICE B. ADAMS [F.].

20th February 1913.

REVIEWS.

EARLY RENAISSANCE DOMESTIC ARCHITECTURE.

English Homes of the Early Renaissance: Elizabethan and Jacobean Houses and Gardens. Edited by H. Arday Tipping, M.A., F.S.A. Fo. Lond. 1912. Two guineas net. ["Country Life," 20 Tavistock Street, Covent Garden, W.C.]

This is another series of reproductions of the admirable photographs of English houses, with the accompanying descriptions, published by *Country Life*. As such, the bulk of the book is not primarily written for architects, but for the cultivated public which takes an intelligent interest in the

subject. The different writers who describe the houses and their gardens have not architecture chiefly in view. They write for a public which admires architecture, it is true, but which is equally interested in family history, and in the hundred and one things which are associated with great houses and the life of their inhabitants. From the architect's point of view, therefore, much of what is said in these pages is surplusage, and there is no question of reading the book through from end to end as a connected whole. This drawback, such as it is, is largely discounted by Mr. Tipping's capital Introduction, which gives a short but continuous story of the period, pointed by references to the numerous illustrations.

Another respect in which architects, more particularly the inexperienced, should be on their guard is that it is no part of the original purpose of the illustrations as they appear in *Country Life* to distinguish between what is old and what is new. They represent the buildings as they now are, and many of the subjects have been so skilfully repaired that it would puzzle the most experienced to tell from the photographs alone which parts of the work are original and which restorations. Nor is it the purpose of the illustrations to present one phase of style only; consequently, although the title of the book refers to the Early Renaissance, many of the prominent examples are of later date. This is inevitable in view of the fact that in the first instance it was the house and its surroundings which were to be described, and not merely the work of a special period. To complain of the mixture would, under the circumstances, be unreasonable.

An incident in the writer's own experience lends point to the first of these warnings. A client who lived in an Elizabethan house, which had been restored by an eminent architect, became sadly out of love with one of the new chimney-pieces. In searching for something more suitable, he came across an excellent Elizabethan chimney-piece in *Country Life*. At some considerable trouble a visit was arranged and made to the ancient house where this desirable example was to be seen. A long round of rooms was examined under the host's illuminating guidance, and at length the object of the journey was reached. On inquiry it transpired that the admired chimney-piece was likewise designed by the eminent architect.

Bearing these cautions in mind, the student of architecture will find in these pages abundant material to interest and delight him. Each house is described in a monograph of its own upon which considerable research has been bestowed; and the photographic illustrations are of the very high standard associated with *Country Life*.

The essence of the book is distilled in the Introduction, which it is worth the while of every architect to read. Mr. Tipping deals with his subject from first-hand knowledge—that essential to ade-

quate treatment—and with sympathy. It is easy to decry the early efforts of Elizabethan craftsmen in an unfamiliar style; it is easy to dismiss the men as ignorant of the rules which governed the application of the forms at which they aimed. But, as Mr. Tipping points out, there is something much more than pure scholarship involved in the work of the Early Renaissance. There is a human element about it quite as fascinating as anything that scholarship produced in later years. By all means let students be trained upon the purest principles, but let them not ignore or dismiss with contempt even the misapplication of those principles in Elizabeth's time, wedded as they are to the originality, the vivacity and the poetry which distinguish that wonderful epoch. An estimate of its work, at once generous and correct, will be found in Mr. Tipping's Introduction.

Kettering.

J. A. GOTCH, F.S.A. [F.]

ANCIENT BUDDHIST TEMPLE DECORATION IN CHINESE TURKESTAN.

Altbuddhistische Kultstätten in Chinesisch-Turkistan über archäologische Arbeiten von 1906 bis 1907 bei Kuča Qarašahr und in der Oase Turfan von Albert Grünwedel herausgegeben mit Unterstützung des Baessler-Instituts in Berlin. Mit 1 Tafel und 678 Figuren. Berlin 1912. Druck und Verlag von Georg Reimer. [Preis, broschiert, Mark 60.]

A royal Prussian expedition has been at work for some years exploring old Buddhist sites in Chinese Turkestan, and in this book Herr Albert Grünwedel describes the discoveries which were made by him, either alone or in association with Herr von Lecoq, during the year 1906. The expedition arrived at Kuča on 23rd January, four days later it had reached Ming Oi, near Qumtura, the first field of work, and Herr Grünwedel left Šoreuq on 25th February, 1907, for Turfan and home. Much of the time was occupied in travelling, and the expedition is to be congratulated on the amount of work which was done during the time spent in exploration.

The book is illustrated with 678 illustrations in the text, of which a large proportion are representations of wall paintings and temples. The difficulty of drawing such non-Western compositions was increased by storms of sand, which filled both pen and brush, and altered the colours when mixed. In the winter of 1906-7 the cold was so sharp that the Indian ink froze while in use, and in the summer the heat was intense. Other troubles which afflicted the expedition were bad weather, earthquakes, and a plague of mosquitoes, and the Chinese officials also seem to have given trouble. The author describes the difficulties of his task in a manner which recalls the tales of English "nature-photographers," if one may compare the great with the small.

The temples are in caves in the sides or bases of escarpments in a Tertiary formation, which

weathers with a well-marked stratification, as the photographs show. Some of the caves were filled with blown sand, and others were used by the present inhabitants of the country. The results which rewarded the explorers varied very much; at some sites hardly anything was found, at others there was an abundance of material.

The caves are not extensive and they and their forebuildings (*Vorbauten*)—as far as the latter are preserved (*erhalten*)—are never or only in the rarest cases completely regular. A certain naïveté was observed in the work: thus, when large stones had been met with in the course of excavation in the line of the walls, they had been left projecting and incorporated in the design of the painted decorations.

The author divides the paintings into three styles: the first is strongly Indian, and the second is a development from it.

During this second style the temples contained a vestibule (*Vorhalle*), generally covered with a lean-to roof (*Pultdach*), and a cell (*Cella*), narrower than the vestibule, roofed with a barrel vault (*Tonnengewölbe*). Throughout the style there was one recognised scheme of decoration with a fixed disposition of the religious subjects. The style may be divided into two sub-styles which possibly indicate different periods, as in the second sub-style new colours appear in the decoration.

The third style appears to be that of another people: with its new schemes of decoration were introduced, and an alteration in the Pantheon shows that the religion was somewhat different. The inscriptions are in Chinese, in contrast with the "Brahmi" inscriptions and decorations of the former styles. Very Chinese, and vigorous in design also, is the dragon-like "tiger" from a temple in Murtuq-ü, shown on page 257.

Of architecture proper the book contains little or nothing. Its interest will be for the Orientalist, and especially for the student of Buddhism, as most of the paintings listed and described are Buddhist, while for members of the Institute the chief interest will probably lie in the decorative effect obtained by the composition of the paintings shown in the illustrations.

There is a copious Index of thirty large pages, and generally the book has been produced with German thoroughness.

Sheffield,

C. F. INNOCENT [A.].

PRICING REINFORCED CONCRETE WORK.

Estimating for Reinforced Concrete Work: a Handbook for Measuring and Pricing Reinforced Concrete. Compiled for the Use of Engineers, Architects, and Estimators. By T. E. Coleman (Major, Staff for Royal Engineer Services). 8s. Lond. 1912. 4s. net. [B. T. Datsford, 94 High Holborn.]

This book deals with the only aspect of reinforced concrete which has not been hopelessly over-written, viz. the methods of measuring and pricing.

Except the series which appeared in the *Building News* (from which this book is compiled), we do not remember having seen any comprehensive work dealing with these subjects. Its introduction in book form is accompanied by much new matter and the necessary revision required to bring the matter up to date and in conformity with the latest phase of a system of construction now incipient but developing with extraordinary rapidity.

The usual slipshod history of the origin of reinforced concrete and a very meagre chapter illustrating the various systems employed are the only stale and unnecessary matters in an otherwise invaluable book. With the exception of some unimportant details, the whole of the information throughout is exceedingly sound, and is so eminently rational that, saving the following exceptions, it almost disarms criticism.

We object to the principle of giving reinforcement, centering, and concrete under different trades. They are preferably measured together. Slabs are not commonly measured cube, and splayed angles to concrete are not measured separately. No information is given as to the best method of tabulating bars to facilitate orders to the mills, nor is the method of measuring centering stated. The statement that piles should be measured and the cost of driving them calculated at per foot cube is very unusual and misleading.

The author speaks of stirrups exceeding 1 inch diameter, and nowhere appears to realise that stirrups are never more than $\frac{1}{4}$ -inch diameter, otherwise they cannot be manufactured on the site without special appliances. He uniformly shows broken brick as dearer than crushed ballast, which is certainly not commonly experienced. His method of pricing cast concrete, including centering and reinforcement, is not in vogue and does not give any real information. In his general information regarding workmanship he fails to emphasise the very great importance of using as dry a mixture as is humanly possible. The comparatively wet mixture he advocates would give only 50 per cent. of the crushing strength at, say, six weeks that the same materials mixed drier would develop.

In view of the fact that a great deal of work is fully loaded at six weeks, dry mixing is essential. The tables of crushing strengths of concrete give no information as to what type of testing apparatus was used, or whether the materials were tested under laboratory or practical conditions, and in any case his results of concrete crushing tests are not according to common experience. There are many useful tables giving the approximate percentage of the proportions of steelwork to concrete, but curiously enough no mention is made of the relative proportion of centering. The author also fails to draw attention to "rolling margins" and the cost of cutting to exact lengths demanded by the rolling mills.

In conclusion, we would cordially commend this

book to architects and contractors about to venture upon reinforced concrete construction, and we are, moreover, confident that old hands will find in these pages data thoroughly reliable in accordance with the best and latest practice.

PERCIVAL M. FRASER [A.].

ENGLISH CHURCH BELLS.

The Church Bells of England. By H. B. Walters, M.A., F.S.A. Illustrated by 170 Photographs and Drawings. 1912. 7s. 6d. net. [Henry Frowde, Oxford University Press.]

About fifty years ago the Rev. W. C. Lukis first drew attention to the bells of our churches; and since that date many articles on the subject have appeared, together with complete accounts of the bells of twenty-three counties, in three of which Mr. Walters' name appears as joint or sole editor. It is pretty clear that Mr. Walters has studied these books and noted up references to all minor articles; and he now gives us the *crème* of those disquisitions enriched with further researches of his own. The book is not only an archaeological book: it puts the subject also in a popular aspect, and gives technical information on bells, bell-cots, belfries, and the uses of bells, including change-ringing.

The work opens with two lists of books and articles: (1) on bells generally, (2) on the bells of certain counties or districts, both confined to the British Islands and the English language. Then we have an account of some very ancient small bells, and find large bells appear in an unknown way in about the seventh century A.D. We then have an elaborate account of the mode of casting, hanging, and ringing bells, with illustrations of towers and bell-cots, and directions as to connecting the bell frame with the tower. This chapter (No. II.) is likely to prove most useful to architects. A little insight is given into the mysteries of change-ringing, and some rules for ringers in prose and verse are set out. We then have tables of all the great bells of the world, and all the great rings in England. Two chapters on the uses of bells follow, with a list of ancient sanctus bells. Then come three chapters (IX., X., and XI.) giving histories of the pre- and post-Reformation foundries. The latter are clear and complete. The former still present some puzzles to be solved; and the solutions which have been given of other puzzles are to some extent conjectural and may require some readjustment hereafter. The dedication of bells is described and discussed, and many Latin verses are given involving the names of saints.

The decoration of bells comes next, with ample illustrations of letters, shields, crosses, stamps, and scroll work, some very elegant, some very curious.

Two chapters follow on pre- and post-Reformation inscriptions. In the former we find lists of all the ancient bells which bear the names of their founders, and all which bear their dates. We then

hear a little concerning the loss of bells in places; and the narrative ends with a chapter on campanology as a pursuit.

An alphabetical list of bell-founders is given, and the usual indexes of names, places, and things.

The book is excellently got up, the type and the illustrations are clear, and the press has been carefully corrected. It is necessarily very condensed, but copious references are given to other works where further information may be found on many details.

AMHERST D. TYSEN.

CORRESPONDENCE.

Book-names for Building-work.

To the Editor, JOURNAL R.I.B.A.,—

DEAR SIR,—In your issue for Feb. 8, there are to be found no less than three references, by three separate writers, to modern nomenclature for our mediæval architecture. The President, in his Address to Students, alluded to the "Sacrosanct periods, which now appear in the guide-books in all the degraded abbreviations of 'Dec.' and 'Perp.'," whilst two reviewers of books follow, referring with approval one to "the old names," the other to "the old terms." Early English, Decorated, Perpendicular, for denoting certain mediæval building-modes in this country. Of late there has seemed to be some ground for hope that these fancy names, so old as to date well back into the nineteenth century, might by-and-by die out quietly, whilst the subject of their application came to be investigated with more and more understanding and insight by students who want to know, as distinguished from those who chiefly desire to be told something. Such hope just now may be a little dimmed perhaps, for some of us, in view of the pronouncement, in favour of these so-called "old terms," by Professor Lethaby—of all men!—in his Chapter XIII., entitled "English Gothic," of the Vol. "Architecture," that he has written for the Home University Library. This little book, packed full of precious lore, which I have read and re-read with keenest appreciation, appears to me to sum up in masterly fashion the whole vast subject of Architecture from its origins down to the present moment. And with like appreciation I have read Mr. Spooner's review of the book, regretting one thing only in this review, viz., that he should confess himself ready to bow to the authority or—shall I say?—to succumb to the fascination of the writer of Chapter XIII., in regard to the terminology, therein sanctioned, for our mediæval architecture.

It is indeed with no little reluctance that I presume to put forth a humble protest against this authority which would rivet afresh, on our educational course for architects, the fetters of a system, for teaching the architectural history of our country

through the middle ages, that I regard as pedantic and believe to be obsolescent; but to me the matter now seems too serious to let slide without a word being raised on the other side. How serious the question has become may best be gathered from Professor Lethaby's own words in this book.

"In architecture more than anywhere," he says, "we are the slaves of names and categories." "The terminology relating to the history of mediæval architecture has fallen into some confusion. Although the matter may be thought to be only one of words, the present lack of agreement must be as puzzling and disheartening to the student as irritating to the scholar. Every one acknowledges that where there has been a process of continuous development, as was the case with mediæval architecture, all delimitation into periods is arbitrary." "The terms Early English, Decorated, and Perpendicular are by themselves, perhaps, not very satisfactory, but as general descriptions of the most typical forms of architecture prevailing during the three great centuries of the Mediæval Period they are irresistible." "The student needs first an anchorage in the centuries, for nothing beside them is fixed." "One quite gratuitous source of confusion has been found in linking the styles to the several kings."

Whereupon, the author proceeds to draw up in array the six "old names," standing for six periods, made to fit the six centuries from the eleventh to the sixteenth inclusive. "There is a slight awkwardness," he admits, "in that three of these names are descriptive, while the others are historical, but for the fourteenth and fifteenth centuries it would be easy to follow the model of 'Early English' and to interchange (but not substitute) such terms as Mature English or Middle Pointed with Decorated, and Late English with Perpendicular." And this is how we are to clear up confusion and make things less puzzling and disheartening to the student, less irritating to the scholar.

Better still, we may proceed to divide each of the centuries, from the twelfth to the fifteenth inclusive, into halves, using in each case the sanctioned name for work executed in the first half only of the century, whilst the blessed word transitional may be made to do duty for work executed in the second half, since "we may go on to say that the more characteristic forms of the styles so named are found in every case during the first half of each century, the latter half being a transitional era. Thus, Norman to 1150, Transition to 1200, Early English to 1250, Transition to 1300," and so on. So, now we are to have not merely one transition, as of old, but no less than four transitions; yet only the first of these four is to be recognised as The Transition. "It happens that several secondary terms in current use would serve to define most of these transitional half-century periods picturesquely, and with substantial accuracy." Accordingly, Sharpe's terms of mature age, Geometrical, Curvilinear and

Rectilinear, rather regardless of Sharpe's own dating for them, are requisitioned with others such as Fergusson's Lancastrian and a brand-new one, Yorkist, to help out Rickman's "old names"; and thus we finally get "an extended list of twelve periods"—no less—each supposed to be just half a century in length, and all duly labelled, forming "a sort of Zodiac of English Architecture."

One may perhaps be pardoned for asking, does all this make for agreement, and wherein lies the necessity for it? What is there about our own mediæval architecture in particular that calls for a Zodiac of Periods to explain it, whilst the author can treat us to the brilliant sketch in the preceding chapter, entitled "French Gothic," as well as to illuminating chapters on other schools of architecture, without needing to introduce anything more than a simple anchorage in the centuries with actual dates of the work when available? What more is called for in our case? Why all this book-made apparatus of learning to enable students of building-work to read buildings that happen to have been erected in Great Britain? The logical-minded French writers need no such aid to explain their mediæval architecture with perfect lucidity.

Of all these book-names for building-work that of Early English seems to have got most misplaced. If words are to mean what they say, if Early English be a term applicable to any of the architecture of this country, surely it should come before rather than after Norman, and be reserved to denote work done in pre-Conquest days, since the English were here first, for centuries before the Normans, and were producing an architecture of their own which, whatever its other qualities, was at any rate as English as it could be, and Early.

I am bound to confess that this last is not my very own idea, and it is but right that I should acknowledge whence I got the notion. Years ago, whilst I still held strictly to the orthodoxy of the Periods, my faith as to the term Early English rightly applying to post-Conquest work was sapped by heretical views that I picked up in the course of a short chance conversation with none other than my friend William Richard Lethaby.—Yours faithfully,
WALTER MILLARD [A.].

The Grievances of Architects.

To the Editor, JOURNAL R.I.B.A.,—

SIR,—The first part of Mr. Peach's letter in your last issue is excellent in its appeal to the civic spirit amongst architects, but it may be used to other purposes than he anticipates. In the latter part we come down to the bed-rock of things—"the deplorable condition of many practitioners" and the lack of "opportunity of earning a reasonable return on his capital." This condition is to be improved and the opportunity increased by throwing open all public architectural work to the outside prac-

tioner. If this were done, it is well known that the bulk of the work would be confined to half a dozen architects, and would be just as much or little machine-made as at present. Machine output is not identified solely with official architecture, nor is mind-work necessarily the prerogative of the private architect. Would the outside practitioner consent to a self-denying ordinance to do only such work as that to which he could reasonably be expected to give his mind and attention? If this were instituted, how would public work be executed by the best architects, for it cannot be contended that there would be a sufficient number of them to go round?

One wonders at times if the Institute exists only for the purpose of helping private architects out of deplorable conditions. There are numbers of its members who, through some reason or other, lack of inclination, want of capital or influence, or the immediate necessity of earning a certain income, are unable to commence private practice. The Institute should have the welfare of these in its keeping who form so large a part of its membership. To return to that bed-rock to which an Englishman refers most—one might have said all—things, it is largely the fault of the private practitioner with grievances in not providing adequate remuneration and continuity of employment for his assistants that such a state of affairs has arisen—a state of affairs in which public offices find it cheaper to do their own architectural work with the assistance of men equally well trained and experienced as the private architect. An assistant in a private office is paid not so much on the value of his work or to enable him to earn a reasonable return on his capital, but on the principle that he is gaining experience for practising on his own account. Then, having gained that experience, he finds that he is too old at thirty-five. The days have changed since the time when he married his master's daughter and was taken into partnership by his grateful father-in-law. They have changed so much that public officials, having discovered the means by which some private architects were able to turn out large masses of work, are now learning to do the same.

The advancement of Civil Architecture is not to be obtained by selfish ends. The true line is the proper training of those practising architecture, whether in private or public offices, their protection against unfair and unjust treatment, and the encouragement of the public in appreciation of the æsthetic and—let us be honest—monetary value of the art we practise.

A COMPLAINER IN A PUBLIC OFFICE.

Suggested Visit of Architects to Canada.

Toronto: 14th February 1913.

To the Editor, JOURNAL R.I.B.A.,—

DEAR MR. EDITOR,—In looking over the discussion upon my Paper on "Canadian Architec-

ture" so nicely published in the JOURNAL just to hand, I notice an omission in my reply which might be considered at least discourteous. In some way I failed to notice Mr. Mawson's excellent suggestion that "members of the Institute should visit Canada in a group," and I hasten to say how much honoured Canadian people, and particularly Canadian architects, would feel if this could be arranged. Personally, nothing could give me greater pleasure than to meet in Canada those who have been so extremely kind to me during my recent sojourn in England. I sincerely hope that such a visit may be arranged and carried out in the near future.—I am, yours very truly, F. S. BAKER [F.].

The Lighting of Picture Galleries and Museums

No. 14 A.M.P. Buildings, Cathedral Square,
Christchurch, N.Z.: 9 Jan. 1913.

To the Editor, JOURNAL R.I.B.A.,—

DEAR SIR,—Through an oversight on my part, I find that I described the illustration fig. 2, page 46 (23rd Nov. 1912), as I photographed it, not as it would appear when placed the right way up in the JOURNAL. In order to make the illustration correspond with the text, therefore, it needs to be looked at upside down.—Yours faithfully,

S. HURST SEAGER [F.].

Scottish Architecture.

20 Tavistock Street, Covent Garden, W.C.:
27th Feb. 1913.

To the Editor, JOURNAL R.I.B.A.,—

DEAR SIR,—My friend Mr. Paterson in a footnote to his admirable paper about "French Influence on Scottish Architecture" says that I claim for Stewart of Finnart the introduction of French motifs into Scotland, but he has misquoted me. I have claimed this honour, not for Stewart, but for Hamilton of Finnart, and am bold enough still to believe that the Renaissance in Scotland went to sleep when Hamilton's meteoric and blood-stained career came to an end.—Yours faithfully,

LAWRENCE WEAVER [Hon.A.].

Mr. Paterson writes with reference to the above: "Mr. Weaver is, of course, right in his facts; my poor excuse is that I wrote from recollection of his interesting lecture on a similar subject and under pressure for publication, otherwise the mistake in names would not have occurred. With his inferences I have perhaps more sympathy than would seem from the terms of the foot-note, but the issue is one which might be argued ad infinitum, seeing that there is nothing to prevent us both being in the right."

Erratum.—Mr. Robert G. Wilson, jun. [A.], points out that Muchall's House, referred to on p. 250 of Mr. Paterson's Paper, is in Kincardineshire, not Forfarshire.



9 CONDUIT STREET, LONDON, W., 8th March 1913.

CHRONICLE.

THE BRITISH SCHOOL AT ROME.

Scholarship offered by the Commissioners for the Exhibition of 1851.

Full particulars of this Scholarship, which is of the value of £200 per annum, and ordinarily tenable for three years at the British School at Rome, will be found in the JOURNAL for 31st August 1912. Past and present holders of the Royal Academy Studentships and of the Soane Medallion, Tite Prize, Owen Jones Studentship, Ashpitel Prize, and Grissell Medal who intend to compete for the Scholarship must submit their names and addresses and birth certificates to the Hon. General Secretary, British School at Rome, 54 Victoria Street, S.W., on or before 10th March 1913.

Henry Jarvis Travelling Studentship.

This Studentship, which is of the value of £200 per annum, and tenable for two years at the British School at Rome will be awarded by the Council of the Royal Institute on the results of the competition for the Scholarship offered by the Commissioners for the Exhibition of 1851. The Studentship will be open to all Associates and Students of the Royal Institute who are under thirty years of age on the 15th September 1913. All who intend to compete, excepting those who are already entered for the Commissioners' Scholarship, must submit their names and addresses and birth certificates to the Hon. General Secretary, British School at Rome, 54 Victoria Street, S.W., on or before 10th March 1913.

Exhibition of M. Hulot's Prize Drawings.

By the courtesy of M. Bonnat, Director of the École des Beaux-Arts, Paris, M. Hulot's Prize Drawings for the Grand Prix de Rome 1901 (subject: "Une Académie Américaine à Paris") are being brought over from Paris for exhibition in the R.I.B.A. Galleries in connection with Mr. Fernand Billerey's Paper on "Modern French Architecture," to be read before the Institute on Monday the 17th March. The drawings will be on view

from the 14th to the 20th March, and all students of architecture and others interested are invited to inspect them.

The Admiralty Arch: A Representative Appeal.

The Times of the 4th March published the following letter addressed to its Editor:—

SIR,—The Presidents of the Royal Academy, of the Royal Institute of British Architects, and of the London Society desire to associate themselves with the wish that has been expressed in Parliament and the public Press for a worthy completion of the Trafalgar Square entrance to the Mall.

The Admiralty Arch marks the entrance to the processional approach to the Queen Victoria Memorial and to Buckingham Palace. It is an essential part of a memorial scheme extending from Trafalgar Square to the Palace, and failure to finish the scheme by a suitable entrance from Trafalgar Square would, we submit, be a deplorable mistake. We appeal to those in authority to arrange for the completion of this great public improvement by means of an adequate approach, before the opportunity is irretrievably lost.—Yours faithfully,

EDWARD J. POYNTER,
REGINALD BLONFIELD,
PLYMOUTH.

At the Meeting of the London County Council on the 4th inst. a recommendation from the Improvements Committee was submitted that they should be instructed to submit a scheme for the extension westward of the street-widening in connection with the Mall to Charing Cross improvement, including the provision of suitable architectural treatment, and to confer with the First Commissioner of Works, the Westminster City Council, and such other authorities as might be necessary. An amendment was carried by a large majority instructing the Committee to confer with the other authorities first and afterwards to submit a scheme.

The Safety of St. Paul's.

The Parliamentary Committee of the London County Council have had under consideration the opposition of the Dean and Chapter of St. Paul's Cathedral to the proposed tramway subway under St. Paul's Churchyard, and report to the Council as follows:—

We are of opinion that in view of all the circumstances, the Council would be well advised, from the Parliamentary point of view, not to proceed further with the scheme for the present, and we submit a recommendation that the provisions relating to the scheme be withdrawn from the Bill for the Session of 1913. Our recommendation covers the proposal for the construction of tramways across the bridge as well as the proposal for the construction of the subway. We consider it desirable that the Council should withdraw the whole scheme. It is not proposed to construct the new bridge until after the reconstruction of Southwark Bridge has been carried out, and it is probable that at least six years will elapse before the completion of the improvement. This will leave ample time to discuss

the question with the City Corporation and to devise some scheme which, while securing to the travelling public the advantages resulting from the construction of the tramways in the City at this important traffic point, will remove any kind of doubt as to injury accruing therefrom to such an important national building as St. Paul's Cathedral. The Improvements Committee concur in our suggestion, and the Highways Committee have informed us that, in view of the terms of the petition presented by the City Corporation against the Bill, they very reluctantly acquiesce in the withdrawal of the clauses from the Bill. . . . We desire to emphasise the fact that our recommendation is submitted entirely without prejudice to the views that may be held as to the engineering features of the present scheme and solely on the ground that new circumstances have arisen which demand consideration, and that the time available before the Council's Bill will come before a Committee of Parliament does not permit of adequate consideration being given to the subject.

This report was considered at the Meeting of the London County Council on the 25th February, and the recommendation of the Parliamentary Committee was adopted by 65 votes to 51.

The Guardianship of Cathedrals.

In the sitting of the Lower House of Convocation, on the 21st February, the Archdeacon of Ludlow moved that the proposed inclusion of cathedrals in the Ancient Monuments Consolidation and Amendment Bill among those national monuments which may be placed by the Commissioners under the guardianship of the Office of Works should be strenuously opposed. He said there was no justification for the Government taking over the care of the cathedrals.

Canon Newbolt said that his experience as a member of the Chapter of St. Paul's Cathedral in dealing with public bodies had not been a pleasant one. Three times they had had to resist schemes for public improvements which threatened disaster to St. Paul's in the undermining of its foundations. There was a great tendency among public bodies to ignore the interests of cathedrals, and to serve what they considered to be the public interests for the time being.

The resolution was carried unanimously.

Church Restoration.

At the same sittings, on the motion of the Archdeacon of Ludlow, the following resolution was passed:—"That it is desirable that in every diocese a competent advisory board should be appointed by the Bishop, which should be consulted before a Faculty is issued for any structural alterations in our ancient churches."

Public Works and Contractors Exhibition, 1914.

The Council of the Royal Institute has accorded its patronage to the Public Works and Contractors' Exhibition proposed to be held in London in March, 1914. The exhibition will be devoted to the requirements of contractors for public and municipal works. The offices of the Exhibition are at 104 High Holborn.

University of Sheffield: Department of Architecture: Vacation Courses.

Much useful work has resulted in the past from the Easter and Summer Vacation Courses held in connection with the Department of Architecture at the University of Sheffield under the general direction of the Lecturer, Mr. W. S. Purchon [A.]. The object of the courses, which are open to all students of architecture, is the study of buildings of architectural importance by means of the making of sketches and measured drawings *in situ*. Special advantages are that permission to sketch and measure a series of important buildings is obtained, all difficulties as to the use and hire of ladders, &c., are avoided, and an instructor is present with the students to give such advice and guidance as may be needed. Easter Courses have already been held in Lincoln, Stamford, and Bath, and Summer Courses in Oxford, Cambridge, and London. The Easter Course, which lasts from a week to ten days, will be held in Painswick and district this year, commencing on 4th April 1913. Visits will be paid to some or all of the following places in the neighbourhood:—Gloucester, Tewkesbury, Deerhurst, Cirencester, and Fairford, and permission has been obtained to sketch or measure at several interesting buildings. For the Summer Course, 1913, a tour in France is being arranged, in conjunction with the Rev. Dr. West [A.] (author of *Gothic Architecture in England and France*). The tour will begin about 4th August, and will last about sixteen days. The route suggested is Paris, Troyes, Sens, Auxerre, Vézelay, Semur, Dijon, Autun, Nevers, Bourges, Blois, Orléans, Chartres, Paris. Students desirous of attending either Course can obtain all information from the Lecturer at the University.

Cost of L.C.C. Architecture.

At the Meeting of the London County Council on the 18th February, in reply to a question as to the cost of the Council's architecture, it was stated that under ordinary circumstances the percentage of the cost of the staff engaged on new school buildings, including establishment charges, is less than half the scale laid down in the R.I.B.A. Schedule.

R.I.B.A. Prize Drawings in the Provinces.

The following selection from the premiated designs and drawings in the Institute Prize Competitions will be exhibited during the next few months under the auspices of the Allied Societies:

Royal Institute Silver Medal (Measured Drawings).—Drawings of Blenheim Palace (2 strainers), by Mr. H. C. Mason (under motto "Pax"), awarded the Silver Medal and Ten Guineas; drawings of the Church of St. Agnes, Cawston, Norfolk, (2 strainers), by Mr. B. P. Gaymer (under motto "Burmah"), and of Southwell Minster (1 strainer), by Mr. W. L. B. Leech (under motto "Mitre"), each awarded a Certificate of Hon. Mention.

Soane Medallion.—Designs for a Terminal Railway Station: 3 strainers by Mr. J. M. Whitelaw (under motto "Solertia Ditata"), awarded the Medallion and £100; 3 strainers by Mr. R. W. Cable (under motto "Registered Luggage"), and 3 strainers by Mr. H. C. Bradshaw (under motto "Rocket"), each awarded a Certificate of Hon. Mention.

Owen Jones Studentship.—Drawings by Mr. W. Harvey (2 strainers), awarded the Owen Jones Certificate and £100; drawings by Mr. H. P. Huggill (1 strainer), drawings by Mr. Ivor Beaumont (1 strainer), drawings by Mr. W. M. Keesey (1 strainer), each awarded a Certificate of Hon. Mention.

Pugin Studentship.—Drawings by Mr. W. Paterson (2 strainers), awarded the Medal and £40; drawings by Mr. J. Hill (1 strainer), drawings by F. E. Howard (1 strainer), each awarded a Certificate of Hon. Mention.

Tite Prize.—Design for the Façade of a Royal Palace: 3 strainers by Mr. C. A. Farey (under device "Palladio"), awarded the Tite Certificate and £30.

Honours and Appointments.

Mr. Edwin L. Lutyens [F.] has been elected Associate of the Royal Academy.

The Council have appointed Messrs. John W. Simpson [F.] and Raymond Unwin [F.] as delegates to the International Congress and Exhibition of Town Planning to be held at Ghent in the month of July next.

MINUTES. IX.

SPECIAL GENERAL MEETING (ROYAL GOLD MEDAL).

At a Special General Meeting, summoned under By-law 70, for the election of the Royal Gold Medallist for the current year, and held Monday, 3rd March 1913, at 8 p.m.—Present: Mr. E. Guy Dawber, *Vice-President*, in the Chair; 10 Fellows (including 5 members of the Council), 15 Associates (including one member of the Council), and one Licentiate—the Chairman moved, Mr. W. Henry White [F.] seconded, and it was

RESOLVED, by acclamation, that, subject to his Majesty's gracious sanction, the Royal Gold Medal for the promotion of Architecture be presented this year to Mr. Reginald Blomfield, A.R.A., for his executed works as an architect and for his contributions to the literature of Architecture.

The Special Meeting then terminated.

BUSINESS GENERAL MEETING.

At a General Meeting (Business) held Monday, 3rd March 1913, following the Special General Meeting above recorded and similarly constituted, the Minutes of the Meeting held 17th February having been already published, were taken as read and signed as correct.

The decease was announced of Percy Richard Bradford, *Licentiate*.

The following candidates were elected by show of hands under By-law 10:—

AS FELLOWS (11).

ALLSOP: George Wilfred [A. 1902], Auckland, N.Z.
GILL-KNIGHT: John Albert [A. 1891].
GREENOP: Edward, P.A.S.I. [A. 1895].

MACKENZIE: Alexander George Robertson [A. 1901].
SCORER: George Oakley [A. 1895].
SPALDING: Reginald Henry [A. 1900].
STRATTON: Arthur James, F.S.A. [A. 1896].
STREATFIELD: Granville Edward Stewart [*Licentiate*].
WALFORD: William John [A. 1901].
WARD: Charles Frederick, Assoc.Inst.C.E. [A. 1902], Newport, Mon.
WIDDOWS: George Henry [A. 1904], Derby.

AS ASSOCIATES (40).

ALLEN-LODGE: Albert Robert, F.S.I. [*Special*].
ANDREWS: Percy Maguire [S. 1910].
BARROW: John William [S. 1910].
BLINKINSOPP: Henry Joseph [S. 1908], Selby, Yorks.
BREWERTON: Frank Asquith [S. 1908], Manchester.
BUCKNELL: Leonard Holcombe [S. 1908].
BUTLER: Arthur Stanley George [S. 1912].
CHISHOLM: David John [S. 1910].
COLE: Leopold Edmund [S. 1910].
COOPER: Archibald [S. 1906], Newbury.
DEWHIRST: Ralph Henry [S. 1908].
FOSTER: Thomas Oliphant [*Special*].
GIBSON: Edmund Herbert [S. 1909], Harrogate.
GOLD: Hugh Andrew [S. 1911].
GORDON: Charles Black [*Special*].
HINTON: John Garfield [S. 1911], Winchester.
INGRAM: T. Frederick [S. 1903].
MEADOWS: Samuel Douglas [S. 1908].
MILBURN: Stanley Wayman [S. 1910], Sunderland.
MOORE: Harold Edward [S. 1911].
MURRAY: Colin Hay [S. 1906], Eastbourne.
NEWTON: William Godfrey [S. 1911].
PEASE: Alex. [S. 1910].
PHILLIPS: Rees [S. 1911].
PIGOTT: Richard Mountford [S. 1909].
RAHBULA: Ernest Alexander Rahles [S. 1908].
REID: Claud Boileau [S. 1911].
ROBERTS: Thomas Leonard [*Special*], Sunningdale.
SCOTT: Harold Seymour [*Special*], Birmingham.
SOLOMON: Henry [S. 1907], Shrewsbury.
STENNER: William James [S. 1904], Bristol.
SULLIVAN: Basil Martin [*Special*].
SUTHERLAND-GRAEME: Alan Vincent [S. 1909].
THOMS: William George [S. 1910], Nottingham.
WAGHORN: Sidney Stanley [S. 1904].
WALGATE: Charles Percival [S. 1905, *Grissell Medallist*].
WEEDON: Harry William [*Special*], Birmingham.
WEINBERG: Judah [S. 1911].
WILLIAMS: David [*Special*], Salisbury.
WILLIAMS: Stanley Hurst [S. 1910], Sheffield.

The Secretary made an announcement re the Henry Jarvis Travelling Studentship [see p. 314].
The Business Meeting then closed.

SPECIAL GENERAL MEETING (ALTERATION OF BY-LAW).

At a Special General Meeting summoned by the Council under By-law 65, and held Monday, 3rd March 1913, following the Business General Meeting above recorded and similarly constituted, the Chairman announced the object for which the Meeting had been called—viz. to consider the Council's proposals for amending By-law 27, so as to make provision for the permanent representation of the Royal Institute of the Architects of Ireland on the Council of the R.I.B.A., and to authorise the Council to take the necessary steps to obtain the sanction of the Privy Council to such amendment—and stated that, suggestions having been made by several of the Allied Societies that the whole question of the representation of such Societies should be further considered, the Council had decided to withdraw the Resolution of which notice had been given pending the further consideration of the question.

The matter for discussion having thus been withdrawn, the Meeting separated at 8.20 p.m.



The New Sorbonne : " The Sacred Grove " (Painting by Pavis de Chavannes in the Grand Amphitheatre). M. Nenot, Architect.

MODERN FRENCH ARCHITECTURE.

By FERNAND BILLEREY.

Read before the Royal Institute of British Architects, Monday, 17th March 1913.

THE French architect and writer on architecture, Blondel, who lived and worked during the reign of Louis XV., used to protest against the free tendencies of the architects of his time, strongly convinced that he at any rate still adhered to the good traditions of French architecture as practised under the previous king, Louis XIV. Time has shown his error, for we, after 150 years or so, would without hesitation classify Blondel's work as belonging to the Louis XV. period ; so that, in spite of his very clear-sighted studies, this great man was unable to analyse the real characteristics of the architecture of his own time. I am afraid that my modest views of the French architecture of to-day may not be any clearer than Blondel's ideas were about that of the eighteenth century, and I am fully conscious of the difficulties of the task that I have to perform.

To appreciate rightly any social development, it is necessary (as for appreciating a picture) to be able to stand back and judge of the whole. In considering modern French architecture, none of us could have that standing-back point of view which centuries will afford to future generations, but you, Gentlemen, at least have that which distance affords, so that your appreciation of French work is probably nearer the point than that of any Frenchman. Besides, you have always given in your studies a kind and watchful attention to the development of architecture in France ; many of the lectures given here have either borne on the history of French architecture, or contained some reference to it in the past or in the present day. Some of you are students of French art whose critical work and comments are authoritative, and I am afraid that whatever I may show, or explain, may be of little novelty and of little use to such learned critics as (to name only one instance) your President, Mr. Blomfield.

My excuse in speaking to-night is that, having worked amongst you already a few years, I may have acquired a little of your way of appreciating French work. At any rate, I have learned to love so much the artistic manifestations of all periods of your great civilisation, and I feel so indebted, not only for what I have learned amongst you, but for the kind and generous spirit with which I have been received, that I shall proceed with this study with the intention not merely of showing facts with which you are probably well acquainted, but of making of it as far as possible a kind of parallel between the development of architecture in our two countries, and with the hope that such comparisons may, perhaps, be of some little use to you in the great problems either of education or of general development which I know are now under your consideration.

As Mr. Blomfield very aptly remarked at a previous meeting here, "The French architects of to-day are not the French architects of former days." Indeed, no one in our day is what men were in former days—better or worse I do not know—but, very rightly, we are quite different. The nineteenth century has probably brought more changes in civilisation than any other century in the history of mankind. Progress in civilisation may be a wrong idea, as men are probably no better and no wiser to-day than they were before, but if, according to Bacon's theory, the object of philosophy and of science is to increase the power of man over Nature, then progress in that sense has been for the nineteenth century not a natural evolution, but a revolution. So rapid have been the changes in adding new power to the hand of man that artists and architects who used to lead the way in civilisation have in this remarkable epoch hardly kept pace with them.

Altogether new problems to face—not a scarcity, but a superabundance of means of building—new materials—new ways of using old materials—too many facilities for decorating—these are the conditions of modern architecture. Rationalism, steel and ferro-concrete constructions, modern expression of modern needs are thoughts which assail the mind of the modern designer. Architects are a dissatisfied body who feel that, if a great deal has been done, a great deal more has still to be done. Probably no country can yet take credit to itself that its buildings are the perfect expression of the new conditions brought about by science; but if there were only one country where modern problems have been faced by architects with that open mind and self-confidence which are the result of technical knowledge, France might claim to be that country.

There has been in France during the last century a fever of construction which has only been equalled in those new countries which have formed themselves on the old continents or on the new. Paris has been replanned and practically rebuilt during the last sixty years. But, whereas these new countries have sometimes erected their new towns in a hurried and somewhat coarse manner, as is natural to young nations, France, on the contrary, has brought to her new work the deliberate care and the knowledge which she owed to her glorious history.

I believe there are two principal reasons for this high standard of technical knowledge. Before all, the French people themselves. In spite of some recent Pan-Germanistic theories on the ethnology of France, I still believe France to be a Latin country, and I see sufficient proof of it in that spontaneous enthusiasm with which the French people at the time of the Renaissance made their own that Latin spirit of order, logic, and method in all intellectual productions. The Renaissance spirit has penetrated so deeply into the heart of France that it seems to have come to the French, not as a painful constraint, but rather as a relief to the complications and subtleties of the Middle Ages. To show how deep and natural is the sense of symmetry and orderly grouping in the French worker, I intend to study as an instance the little French *agent-voyer*, or village surveyor, setting to work to plan, say, a municipal school and Mairie, and compare him to one in a similar position in Great Britain. Here, the man will set first the principal room he has to deal with to the dimensions he wants it, place it as best suits the north or south light; he will respect a hedge or a ditch that exists on the site; if some smaller room is required he will not modify that which he has already completed, but will add this new room at the place where it comes most conveniently for circulation, light, or otherwise. If another room is required, it is not likely to disturb the arrangement already made for the previous ones. He analyses each element separately in all its practical and economical sides, and adds one to the other as best he can according to what he knows of the requirements. The considerations which will determine the mass of the entire building are, above all, considerations of utility, and the appearance will depend on what he knows in the treatment of the details. He sets to work like the Gothic builders did, and if nowadays the result is not generally called Gothic because the striking features of Gothic details are missing, nevertheless the essentials are Gothic in this respect that the grouping or relative importance of the elements is not governed by a proportionate relation of the detail to the whole. The French *agent-voyer* does not

analyse details in the same way ; he conceives at once a little monument ; he knows roughly what elements he has to deal with, and will make a synthesis of it. The Mairie will form the central block, the boys' school on the one side will balance an exactly similar girls' school on the other side—north and south do not matter—windows are the same on the left as on the right, equally spaced ; no ditch will interfere, but the Mairie must be on the axis of the village green. One may smile at this rather naïve sense of symmetry in such small buildings, but I like to consider that this born tendency to balance, however ridiculous it may be on these small lines, is a marked proof of the French inclination towards monumental architecture.

These remarks cannot, of course, apply to the good men of either country ; indeed, the really good French architect will not allow the practical side of his work to suffer from his love of order and symmetry. Equally, the educated architect in Great Britain will know how to subordinate his inclination for practical considerations to the requirements of architectural grouping ; such great names as Inigo Jones, Wren, Gibbs, Adam, or Chambers are sufficient proof that your nation is capable of adapting itself to the most refined kind of classical composition ; but it seems to me that these achievements have been attained by the personal effort of much-travelled and highly cultured men. I feel that I can say that the British mind is naturally inclined towards the Gothic methods of setting to work, whilst the symmetrical and orderly grouping of the masses is a natural tendency of the French mind.

The French spirit of order and organisation has naturally enough not only expressed itself in the classical planning of the architects. It appears in all manifestations of French social life. Whether the politician be Colbert or Napoleon, the French have planned on classical lines their roads and their canals ; they have codified their laws ; they have centralised their political administration to an extent which is not without its critics ; and they have organised their education, particularly the education of the artists, and amongst them that of the architects. This is the other cause which I think makes for the classical value of the average architectural production in France.

I intend to give to this question a little more importance perhaps than I should if I considered only its bearing on the present subject, but knowing what anxious attention you are giving to the question of the education of architects in Great Britain, I feel that views on this subject, however unauthoritative they may be, may possibly be opportune at this moment. The education of the architect in Great Britain is far from being neglected, in fact there are many schools where the greatest care and attention are given by the best men to the welfare of students. But perhaps it may be said that the number of these schools, together with a certain lack of co-ordination between them, tends to weaken their efficiency and prevent that unity of purpose which is necessary to obtain the complete confidence of the student. It must be realised how distressed is the mind of the beginner in architecture in our day. Ignorant as he is of the practice of composition, and often of the most elementary methods of setting to work, he is induced to get his inspirations from such very different sources as Ely or St. Paul's Cathedral, Chartres or the Louvre, the Forum of Rome, the Parthenon, or St. Sophia in Constantinople. The tendencies of his elders in practice are so varied that he does not know whom to follow, or, rather, he does not know how to discern those qualities they have in common, and which make for their value. Unless a strongly organised system of education gets hold of him and conducts him by degrees to knowledge, his mind will be a sort of Tower of Babel, from which confusion cannot be cleared. Doubt troubles the French student but little. He knows only of one school—and he goes to it.

I have often heard it said here that French architects in their school are taught to adhere to old French traditions, and that in this fact lies their superiority. I take this opinion as such a great compliment that I should by no means think of contradicting it. Nevertheless, I should like to analyse these traditions. Are they traditions of style ? How could they be ? I intend to

show, in reviewing with you the nineteenth-century work, that French architecture has passed through evolutions of style quite as varied and numerous as your own architecture has done. Buildings of to-day do not resemble those of thirty years ago—still less those of 1820 or 1830—and all these have little in common with eighteenth-century architecture.

Are they traditions of methods in setting to work? Perhaps—but, still, we do not work like our grandfathers—tracing paper, lead pencils, transfer paper, the introduction of the metric system have changed ways and habits.

Are there any traditional rules or dogmas? I know of none. The French tuition offers nothing of university teaching. It does not teach, in fact. I know of no particular system of proportions either by relation of mathematical figures or correspondence of angles at certain degrees.

To my mind, the greatest and most important tradition followed by French students is that tradition of working in common in a studio under the guidance of a master. The studio keeps alive the experience gained by previous generations, and each generation adds to that experience the benefit of its own, supersedes slowly out-of-date methods or fits them to newer requirements. The master has himself been in the studio in his younger days, has obtained the degrees and successes which students are now seeking for, and offers them the benefit of the experience he has himself acquired by his work, his travels, and his achievement in practice. But, perhaps, still more than by the influence of the master, the young student will benefit by the experience gained by his companions who have been in the studio a few years before him. Knowledge comes to him but slowly—odd work or tracings are at first his only occupation. They thoroughly train him in the material part of his work and provide him with a certain stock of details, whilst the discussions among his elders and the corrections of the master lead him to understand what qualities to seek for before trying his hand at designing. He understands later the grammar or the logic of the elements he is dealing with, as others learn how to construct a sentence, and, last, he discovers the meaning of composition, that is, how to put one's own ideas in order—common sense in designing. He learns how to eliminate from his composition all unnecessary elements, all that does not express the meaning of the programme, or the needs of a simple construction.

This mere logic of common sense, this sincerity in the means of expression and of building, forms all the technique of French tuition. It is that kind of technique which may not provide the student with ideas any more than with genius, but which allows him to express clearly his ideas. This technique is to the French mind (as mathematicians would put it) a condition which is probably not sufficient but necessary. The work in common in studios provides it.

The only drawback to the studios as they now exist, is that those students whom necessity does not bind to work in a practising office as well as the studio, do not get from it the necessary practical training. Up to about the middle of the nineteenth century, studios were nothing in France but the office of the master; so that the advantages offered by the School were only a complement to the practical experience gained in the office. I hope I am not indiscreet in saying that those responsible for the welfare of the French School are anxiously considering how to re-introduce a similar system in its organisation.

The School itself does not teach, but it keeps the interest alive in the studios—official or independent—by providing the different degrees and medals for which students have to compete; it also provides the Government diploma, prizes of a similar nature to your Pugin or Tite Prize, and above all, the Prix de Rome. I hardly need emphasise the value of this last institution, as you have shown your appreciation of it by creating lately a similar award in this country. I sincerely hope that it may soon acquire here the prestige which it enjoys in France, and that it will soon offer to the British laureate, besides a kind of glory which artists are naturally

inclined to appreciate, the prospect of work on his return from Rome, as this is such an important factor in the success of the French institution.

It struck me that, as this award is now for the first time being competed for in Great



BIBLIOTHÈQUE NATIONALE: "STUDY." (Sculptor, M. Barrias; Architect, M. Pascal.)

Britain, it would be interesting to show what a French Grand Prix really was, and I am able to show on these walls M. Hulot's Grand Prix of 1901. The author and M. Bonnat, the Director of the Beaux-Arts School, to which the drawings belong, have been kind enough to authorise this exhibition, and I am thankful to you for the assistance you have given me in obtaining their consent. The reasons which prompted me to select M. Hulot's work were, first of all, that the author does not require any introduction to you—as you have had the opportunity of studying the very interesting restoration he made of the ancient city of Selinonte.* Secondly, M. Hulot's scheme seems to me specially appropriate in this respect, that, although it is conceived in a very classical spirit, and studied nearly to a point for execution, it is presented in that brilliant manner which has been the characteristic of the school *projets* during the last two decades. M. Hulot has also boldly abandoned the academical tradition of designing his composition



MINISTRY OF FOREIGN AFFAIRS, PARIS. (M. Lacornée, architect, 1845.)

on one centre. If one considers the character of the programme ("An American Academy in Paris"), this *parti* gives an appearance of reality particularly attractive. I have little doubt that we shall soon see in Paris an exhibition of British Prix de Rome—schemes which, whilst preserving the same technical value, will be a marked expression of the modern British conception of architecture.

This new British Prix de Rome, and the necessary co-ordination between the other prizes offered to British students, will no doubt prove sufficient to induce them to work together and in greater numbers.

I do not think that I could conclude this study of the French School more efficiently than by translating these few words of the late M. Guadet—the last, perhaps, that this much

* See JOURNAL, 25th July 1908.

regretted master wrote. Speaking of the School for which he did so much, he said: "I only wish that this School will remain true to its beautiful and noble mission, which is not to teach art, but rather to refrain from teaching. Its higher and more generous purpose is, whilst it offers pupils means of doing work, to bring together and put to fruitful competition all the teachings (absolutely free) of the most different, sometimes the most opposed masters."

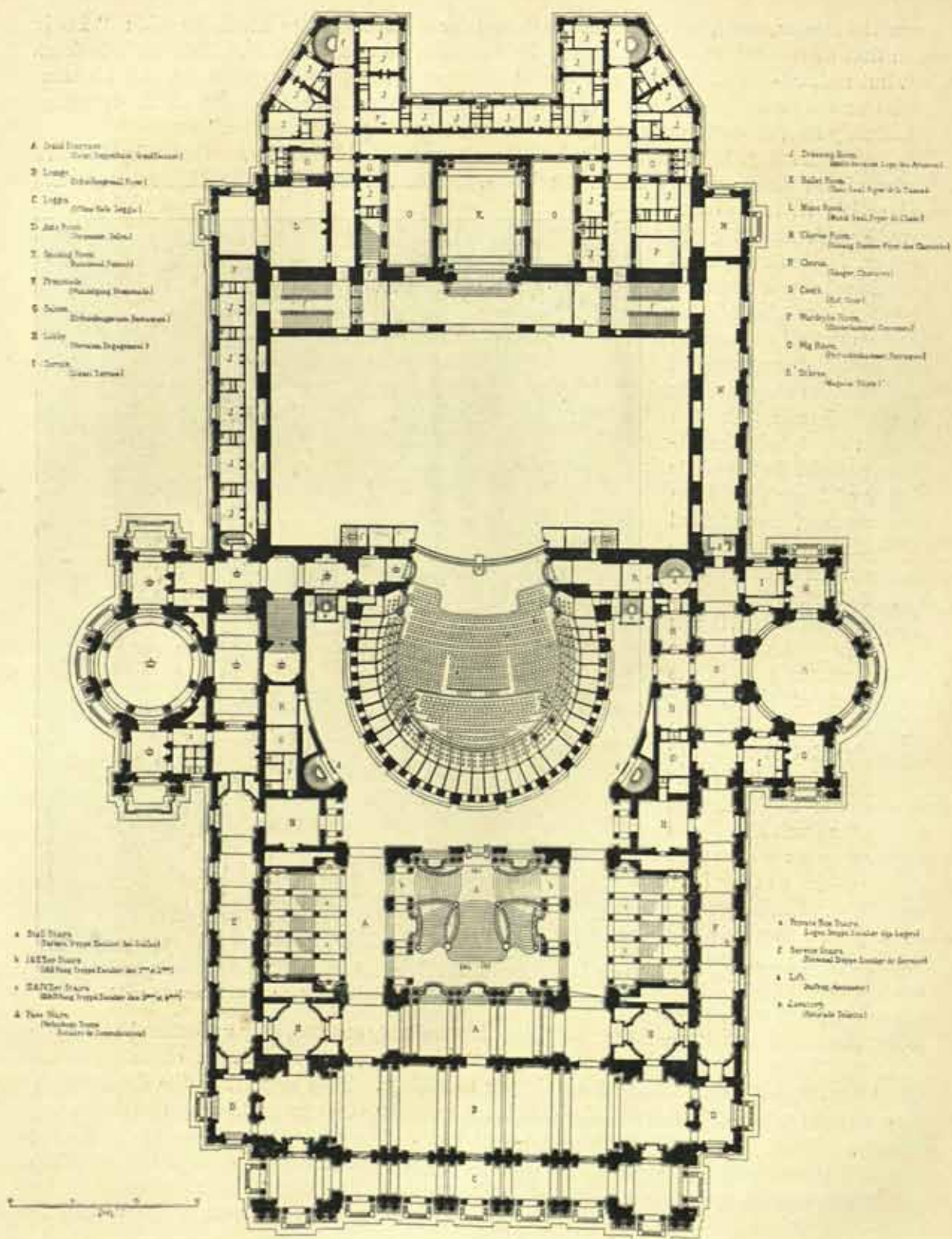
Before showing illustrations of modern French work, I feel it is necessary that I should add a few words on the great help which the French architect receives from the different craftsmen

and artists he has to employ. French modelling and carving, for instance, are a tradition of over a thousand years. Since Amiens or Chartres there has been an uninterrupted sequence of clever carvers always ready to fit themselves to the changes of style in the different periods. In the whole history of French art I am not aware of any period of slackness or bad taste amongst these obscure artists. In fact, at the decline of every great epoch, it was they perhaps who kept alive the interest we find in the refinement of the detail. They were never better than when the Gothic style was in its last days; their perfection was at its height during the Louis XV. period—they are as clever and sincere to-day as they have ever been. Gilding, metal chasing are arts purely and solely French, and are also as alive now as ever. Painters, joiners, and smiths are



BIBLIOTHÈQUE NATIONALE, PARIS: READING-ROOM. (M. Labrousse, architect, 1845.)

better than good workmen—they are artists—they not only execute, they understand colours or the proportion of the mouldings; they do not value the mere neatness of execution or its difficulties, such as very undercut carving or mouldings. They appreciate the detail which they have to execute in its essentials—that is, the beauty of its proportions and its decorative effect in relation to the whole work—they have taste. The difficulties of new methods or of new materials only excite their interest. The workmen of the modern industry of constructive steel-work, for instance, so readily lend themselves to the decorative effects required by architects, that experiments in that new branch of construction are nowhere easier than in France.



NATIONAL OPERA HOUSE, PARIS: PLAN OF AREA. (Charles Garnier, architect.)
From Edwin O. Sachs' *Modern Opera Houses and Theatres*.

One may add that France is one of the richest countries in building materials. She possesses the most complete selection of stone, from the hardest to the very soft, extremely well quarried. "Stereotomy," the science of cutting and fitting stone, is a French art steadily developed since the

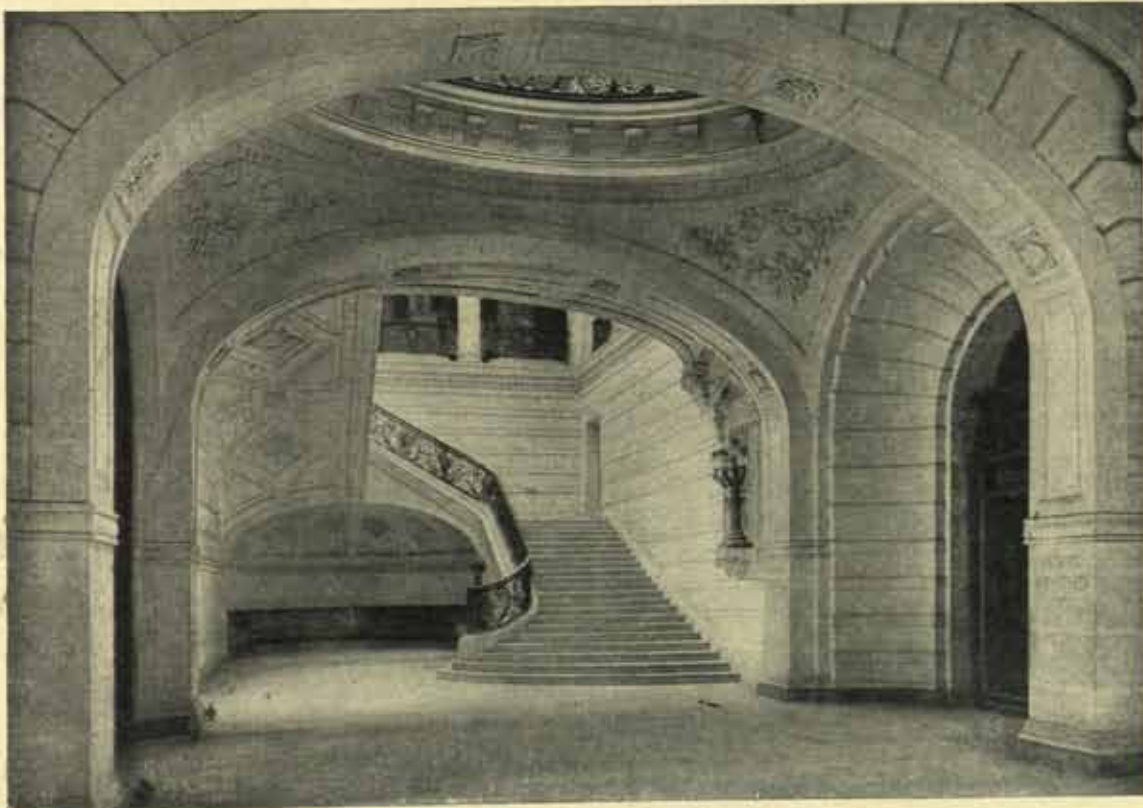


NATIONAL OPERA HOUSE, PARIS: MAIN STAIRCASE. (Charles Garnier, architect.)

Gothic days, and its application to the most daring vaultings has by no means diminished since the introduction of steel-work or ferro-concrete. Ferro-concrete itself, if not altogether of French invention, has, however, received in France its earliest applications. The high scientific standard

tions, and that in practice they receive the necessary help from the builders, the craftsmen, and the artists whom they have to direct. What results modern architects have been able to achieve under such favourable conditions I will try to explain in reviewing the various phases of architecture during the last century.

I should like to consider the history of modern French architecture as beginning exactly in the year 1665, the date when Bernini, who had started rebuilding the Louvre, was sent back to Italy, and when the French architect, Perrault, appointed in his place, started his famous colonnade. Colbert and Louis XIV. were then giving the *coup de grâce* to French feudalism. Did those shrewd politicians feel the new spirit which was going on in the studios, or was it part of their policy that France should have an art of its own? They broke, however, the traditional artistic rela-



THE NEW SORBONNE: MAIN STAIRCASE. (M. Nénot, architect.)

tions with Italy. Perrault served them well—his colonnade was better than a fine monument, it was the affirmation of that modern principle, the one order, with its accompaniment of the base story and the possibility of the attic. Raffael had a suspicion of it in designing the Palazzo Vidoni in Rome, and Palladio and Sanmicheli in their various attempts applied it sometimes; but it is at the Louvre that it reached the importance of a principle. Classical designers have lived on that principle ever since. Mansard the younger followed it with possibly less happy proportions at Versailles, and it received a triumphal confirmation when Gabriel built those two gems of buildings on the Place de la Concorde. It was a short brilliant period—just the reigns of three kings—one of those sparks in the history of civilisation, the brightest, perhaps, ever since those fifty years or so during which perfection had been reached in Athens two thousand years before. In the meanwhile (the eighteenth century) Athens, which had been forgotten, was slowly being discovered; travel-

lers were bringing wonderful reports. For the first time in history, men understood that something had been done before, of a beauty much greater than they had ever dreamt in doing their own beloved work. They lost that enthusiasm of self-confidence necessary to good work. From artists that they were, they became archæological pedants. They were so in France as everywhere else during the first quarter of the nineteenth century. They had before played at being Romans as amateurs, and in doing so they had remained themselves; they were going now to be Greeks and Romans in earnest, and that clumsily. They were going to be more Roman than the Romans themselves, and their buildings showed a severity and a dullness unknown to antiquity. Talent was not lost, but the simple-mindedness of the artist was. The Prix de Rome schemes of the early nineteenth century were of a noble severity. The gigantic plans had to take the lines of the Roman Forum of Trajan, and every building to recall the familiar outline of a basilica. Bare, plain walls a quarter of a mile long were pompously relieved by remarkably well-drawn windows fifty feet apart, and surmounted by a delicate cornice carefully shaded—the drawing of which alone must have taken a week to execute.

Far from following the traditions of the eighteenth century, the art of that period was then profoundly despised, or even hated. When the National Library was being enlarged, the Louis XV. work was pulled down with delight; canvas from ceilings painted by Boucher was used to protect floors from plaster and mortar, and it is probably due to the alterations of that period that you possess in the Wallace Collection a wrought iron and bronze staircase railing from that monument. We must not tax these men with vandalism, as it seems to be in the nature of men to despise the work of their immediate forefathers. We gladly destroy now Early Victorian work which the next generation will respect.

Roman and Greek models, however, soon proving insufficient, Italian Renaissance work became a source of inspiration, although buildings were perhaps no more exactly Italian than they had been exactly Roman. Archæologists, hard at work studying and classifying every period of art, provided architects with new models to such an extent that it becomes difficult to follow the various influences and divide them into different groups, as years, styles, and men's ideas mixed themselves in such a way that they could not be separated. But a few important facts became dominant—medieval buildings began to attract attention. There has not been in France exactly what is called here a Gothic revival, but a great name dominates the study of the art of the Middle Ages—that of Viollet-le-Duc. To all appearances Viollet-le-Duc failed to obtain practical results from his efforts. He thoroughly failed in his endeavours to reorganise the Beaux-Arts School. His proposed reforms had been sanctioned by Napoleon III., but it brought nearly a revolution, as, during the few lessons he gave, he had to seek police protection for his safety. His own methods of restoration have been condemned since as being too radical, and in the buildings he himself erected he showed that his creative power was not to be compared with his critical power. As to the isolated attempts in Gothic style of his followers, work was never produced to approach in artistic value, as well as in importance, such buildings, for instance, as your magnificent Houses of Parliament.

The only practical achievement of Viollet-le-Duc has been the creation of those governmental departments—the "Edifices diocésains" and the "Commissions des Monuments Historiques,"—which have saved many old French buildings from destruction. Nevertheless, the influence of Viollet-le-Duc has been enormous—being much attacked, he has been much studied, and his captivating writings have been read by every architect. As he professed not merely a revival of the Gothic forms, but a theory of rationalism and of sincerity towards means of construction old or new, and as at the same time the iron and steel industry was providing new ways of building, these principles have become the dominating pre-occupation of French architects. Even such classical designers as Labrouste attempted as early as 1845 to give proper architectural treatment to

steelwork. The lecture rooms of the St. Genevieve Library and the National Library are classical examples of these early efforts.

The greatest part of the Beaux-Arts school built by Duban showed similar tendencies, and I regret that I am not able to show a better illustration of it than its central cloister. The Palais de Justice, by Duc, conceived in a more modern way of interpreting Greek models, although it does not introduce steelwork, is particularly interesting from the new principle of stone vaulting applied to its "Vestibule de Harley." This vaulting is neither Gothic nor classic, but the analysis of its constructive elements, which is thoroughly modern, would probably have proved dangerous to a less clever artist than Duc.

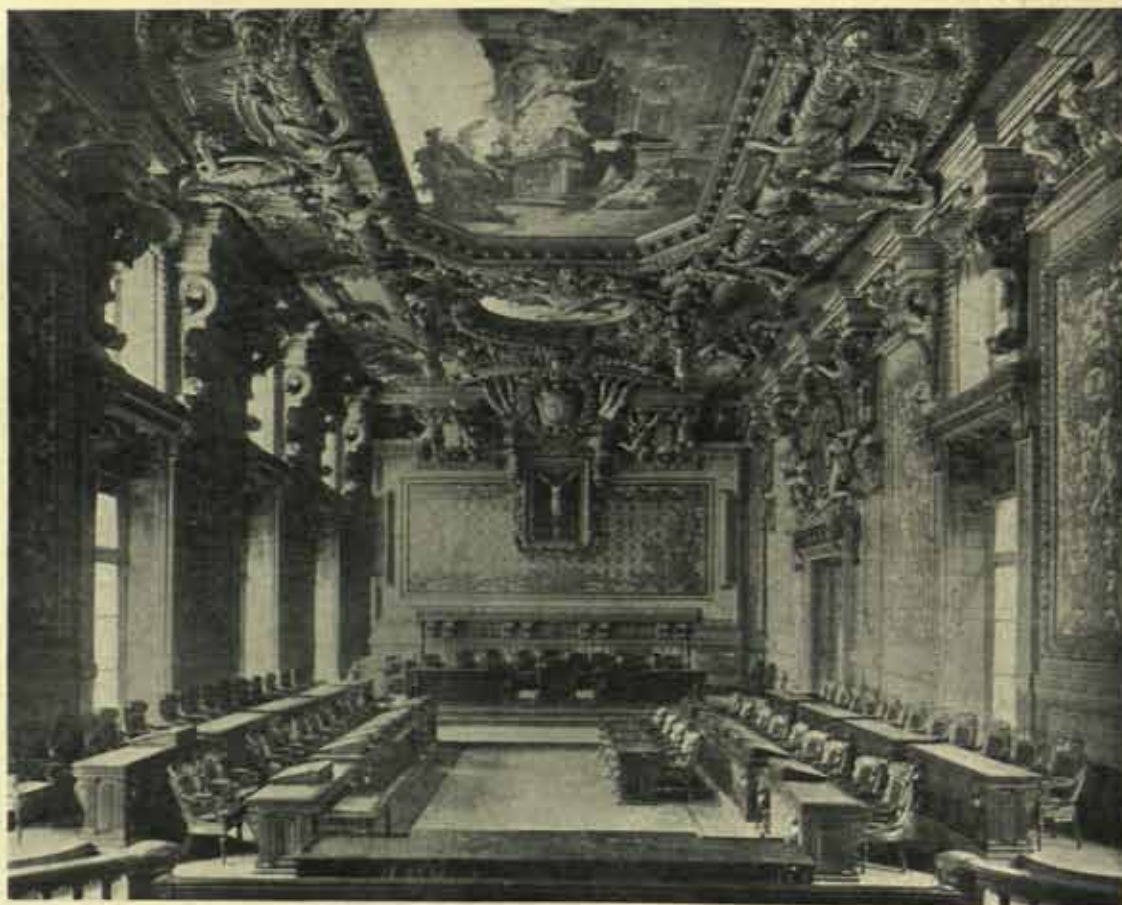
Whilst the nineteenth century was advancing in years, France had been enjoying a fairly long period of peace, during which she recovered from the wars of the Revolution and of Napoleon. She became rich again, and prosperity was at its height during the Second Empire; Napoleon III. was creating a new nobility, chiefly nobility of finance. This new society—which pulled Paris down, replanned it, rebuilt it; which created Biarritz, Nice, and Monte Carlo—required an architecture to express its thirst for pleasure and extravagance. The architects of the period had full opportunities of satisfying it, but the greatest opportunity of all, however, was given Garnier when he built the new

Opera House. Napoleon III. and the Empress showed the interest they took in the building by themselves sending in a scheme at the competition. They did not produce a plan, which they considered superfluous, but their perspective design marked their intention that the



INSTITUT OCÉANOGRAPHIQUE, RUE SAINT-JACQUES, PARIS. (M. Nénot, architect.)
From *L'Architecte* (Paris 1911).

architecture should be French; it represented the "Garde Meuble" of the Place de la Concorde, altered at the last moment for Perrault's colonnade of the Louvre. Garnier tried to be as French as he could after nearly a century of Greek, Roman, Italian, and Byzantine work, and after his own restoration of the Greek temple of Athena at Ægina. The Opéra, at any rate, has been the magnificent expression of that exuberant period. It is to France what the Houses of Parliament are to England. Following an age of adaptation to forms and methods of antiquity, both monuments are the sign of the return of both nations towards home traditions. England has looked for them further back than France; that is the



THE COUR DE CASSATION, PARIS. (M. Coquart, architect.)

only difference. To us French architects, the plan of the Opéra [p. 324] is the perfect type of modern planning. It is held in France in such admiration that it has appeared as the necessary accompaniment to the bust of Garnier in the monument erected to his memory some ten years ago. This monument was designed by the respected master, M. Pascal, who was Garnier's collaborator at the Opéra. The bust is by the sculptor Carpeaux.

Garnier, who had been travelling all over Europe studying modern methods of theatre planning, found no better model than that classical French masterpiece, the theatre of Bordeaux, built by Louis exactly 100 years before. Important features were adapted from Bordeaux, such as the main lines of the principal staircase and the ingenious treatment of the cupola on pendentives covering the auditorium; but where the two artists differed, and where Garnier's in-

clination towards modern rational planning found expression, is in the treatment of the exterior outline of the two monuments. Whereas Louis framed his composition in an unbroken rectangular block, Garnier expressed outside every element of his composition :—the foyer and its



THE LOUVRE: DECORATIVE ARTS GALLERY. (M. Redon, architect.)

loggia on the façade, then the cupola of the auditorium, and higher up the stage crowned by the figure of Apollo. The two side pavilions are: one the State entrance, the other the public carriage entrance. Absolute sincerity in distributing the masses so as to express their purpose,

joined to a perfect classical unity in the grouping of these masses, this is the modern lesson offered by the Opéra. Other influences were at work; the study of early French Renaissance brought the originality and the richness of treatment of the details—the latest discoveries as to the details of Greek work influenced many motives of decoration—and, last, the theory that colour should not be excluded from the exterior treatment of architecture found expression in the introduction of differently coloured marbles, of bronze, and of gilding. The Cercle de la Librairie is another instance of Garnier's personal manner.

The requirement of richness and also the return to French Renaissance work is well expressed in the enlargements of the Louvre and of the Tuileries, by Lefuel; his Pavillon de Flore is a familiar type of the architecture of this time.

The Fountain of the "Observatoire," by Carpeaux, is also a typical monument of the same period which artists love and of which France is proud.

The re-planning of Paris, however, elaborated by Baron Haussmann and the engineer Alphand was, perhaps, one of the most important architectural undertakings to the credit of Napoleon III. Town planning was not altogether a novelty in France, since towns like Nancy and Bordeaux, formed in the eighteenth century, are classical models which can still be most usefully studied by modern designers; but the modern variety of treatment, the utilitarian considerations, as well as the confident taste shown by the builders of the Second Empire, prove how the old French tradition could well adapt itself to modern needs. What is most remarkable and characteristic of the French taste is how the new work fitted itself to, in fact continued, the schemes begun by previous generations. That extraordinary axis which, starting at the Louvre, goes on westwards for five miles, is the work of two centuries. It was not a preconceived plan, as Bernini and Perrault in working out the solution to the awkward centre of the Louvre and Tuileries had certainly no idea that it would form a basis of work for about a score of future monarchs and different political régimes. Each stone added to the development of this axis has been an improvement to it: the Place de la Concorde first, then the Champs-Élysées, then the Arc de Triomphe, then the Avenue de la Grande-Armée. To follow it is a lesson in French history; it is also an object of wonder how so many different kings, emperors, republics, municipalities, commissions of improvements, and so on, have all worked with such unity of purpose for the betterment of what had been done before.

Napoleon III. developed the "Quartier de l'Étoile"—planned it as a star the centre of which is the Arc de Triomphe; connected it to the north of old Paris by the Boulevard Haussmann; encircled Paris with a new line of boulevards, and created converging avenues, such as the Boulevard de Strasbourg and Saint-Michel, which, while serving his strategical purpose, gave Paris a circulation without which it would have soon become congested. The creation of the Bois de Boulogne to the west, the Bois de Vincennes to the east, the Parc Monceau in the centre, the Buttes Chaumont to the north, gave healthy lungs to this compact city. These alterations gave rise to a considerable amount of building and land speculation; but to attempt to prevent altogether speculation in such undertakings is perhaps to prevent oneself from carrying them to success.

The Franco-German war stopped the tendencies to extravagance of the Napoleon III. period; France set to work earnestly to repair the damage of war and prepare a new prosperity. She built more than ever, and, but for a few exceptions, architects continued to take their inspirations from the French work of the early or late Renaissance.

The Hotel de Ville was rebuilt by Ballu on almost exactly the same lines as it stood before the war. The Château de Chantilly, rebuilt by the late M. Daumet in the manner of the early French Renaissance, is typical of the refined, and at the same time very personal style of this much-regretted master.

The School of Surgery was enlarged by M. Ginain in a Néo-Grec style, which is probably more French in appearance than had been the work of Hittorf at the Gare du Nord, or of Duc at the Palais de Justice. The Musée Galliera, also by M. Ginain, illustrates the same aspirations of this learned artist.

The Musée du Trocadéro, by Davioud, at the time of the Exhibition of 1878, is an interesting attempt in foreign style, and in treatment of modern means of construction in its interior work.

The church of Saint-Pierre-de-Montrouge, by M. Vaudremer, and the Basilique du Sacré-Cœur," by M. Abadie, sometimes called Byzantine, are rather a personal expression of style, inspired largely by the Romanesque buildings of the South of France.

The Sacré-Cœur is a remarkable piece of execution; the fitting of the extremely hard stone with which its walls, its roofs and its double cupola are built is a masterpiece of stereotomy.

The Opéra-Comique, by M. Bernier, is a refined piece of architecture which marks a practically complete return to the classical French tradition.

The Rubens room at the Louvre and the Musée des Arts Décoratifs, by M. Redon, are typical models of modern architectural decoration. M. Coquart in his decorative work to the Cour

de Cassation or High Court of Appeal has no doubt been inspired by the late Venetian ceilings of the Palace of the Doges, but I would point out that whilst the composition is quite as decorative, the treatment of the details and the execution are a great deal more refined than the Venetian work.

One of the most important monuments France found necessary to remodel and enlarge was



THE GRAND PALAIS, PARIS. (M. Henri Deglane, architect, Paris.)
From "S.A.D.G." (Paris, 1911).

the Sorbonne, or University of Paris, of which M. Nénot is the architect. M. Nénot's career is worth recalling. Still a child, he volunteered in 1870 and deservedly won the high distinction most honoured by the French, "the military medal." Prix de Rome in 1877, he competed

during his sojourn in Italy for the monument which Rome was going to erect to Victor-Emmanuel. Of some 300 competitors he obtained the first prize by sixteen votes out of seventeen. The execution, however, was not guaranteed to the winner, but he was recompensed on his return to France by the building of the Sorbonne. He was twenty-seven.

The plan of the Sorbonne [p. 326] is one of the most businesslike plans I know—at the same time it shows essentially those very French qualities of symmetry and monumental treatment necessary to the dignity of such a building. The ease with which M. Nénot has surmounted the complications and difficulties of the problem seems to me admirable. Even the chapel of the Sorbonne, built under Louis XIV., comes into the scheme as if part of an original conception. Besides being a remarkable piece of engineering, this plan is a model of simple unity and of sincerity. Everything is true in this building, where every mass expresses the purpose or the mechanism of the plan.



PONT ALEXANDRE III, PARIS: PYLON.
(MM. Cassien-Bernard and G. Cousin, architects, 1900.)
From "S.A.D.G." (Paris).

The hall of the Hôtel Meurice and the Institut Océanique [p. 329] are two of M. Nénot's latest works. The latter supports his theory that the architect is quite justified in submitting himself to the wishes of his client with regard to style, as style is a language, and a man can talk in any language he likes, provided he expresses himself clearly and sensibly in it.

By degrees, French architects had returned to a purer submission to the French tradition of the eighteenth century, and they had completely come back to it at the time of the International Exhibition of 1900. Although the permanent buildings of this period are probably well known to you, I shall nevertheless rapidly recall them to your memory by illustrations.

The Grand and the Petit Palais are no copies of any eighteenth-century buildings; they are each in a different way quite personal, but they frankly illustrate this return to the classical tradition. The group of sculpture on the pier illustrated of the Grand Palais [p. 333] is by M. Verlet.

May I specially point out the staircase of the Grand Palais, not so much as an illustration of the great talent of M. Deglane, but as an instance of the French steel manufacturer's successful efforts in carrying out the most elaborate architectural designs? The whole staircase, including the steps, is of metal. The steel nave is also most elaborate in the architectural treatment of the details.

The Petit Palais, a great success in the mind of the Parisian, shows those refined qualities of treatment of the detail which its author, M. Girault, no doubt owes partly to the influence of his master, the late M. Daumet.

May I point out how the decoration of the Pont Alexandre III. by MM. Cassien-Bernard & Cousin is a sincere expression of

the daring piece of engineering which forms its structure, not omitting the steel pivots which take the place of our old heavy keystones? The sculpture with which the architecture of the bridge is enriched is by such men as Falguière, Fremiet and Marqueste.

The attempt at steel architecture in the Quai d'Orsay station by M. Laloux is also well known to you.

The Chapel of Consolation, commemorating the disastrous fire of the "Bazar de la



CHAPELLE NOTRE-DAME DE CONSOLATION, RUE JEAN GOUJON.
(M. Guilbert, architect, 1900.)

Charité," by M. Guilbert, is a particularly well-marked return to the Louis XVI. style, especially to that type so characteristic in the drawings of Delafosse.

The latest addition to the National Library, from the designs of M. Pascal, now being completed by M. Recoura, shows how the same artist, although keeping his strong personality, has modified his style from that of the Opéra, where he was an important collaborator, to a style nearer to the classical French tradition. It appears to me particularly interesting to refer to the "Château de Doux" by the same master, as illustrating the fact that monumental town architecture does not prevent architects treating country domestic architecture in a spirit similar

to the British conception of it; the château in question, built in Auvergne, would not be out of place in Scotland.

The few examples I have been able to present of the French buildings of the nineteenth century may have been sufficient to show that if French art has passed through influences or means of expression as varied as the Greek manner or the Gothic—the Byzantine or the early French Renaissance—it has not, at any time, loosened the rigidity of its love for orderly composition; and I feel this is where during the nineteenth century France has greatly differed from Great Britain. Archaeological discoveries have put a severe test on the natural tendencies of the two nations; whilst France has strictly adhered to her love for orderly grouping, the Gothic revival has in England played havoc with the classical traditions dearly



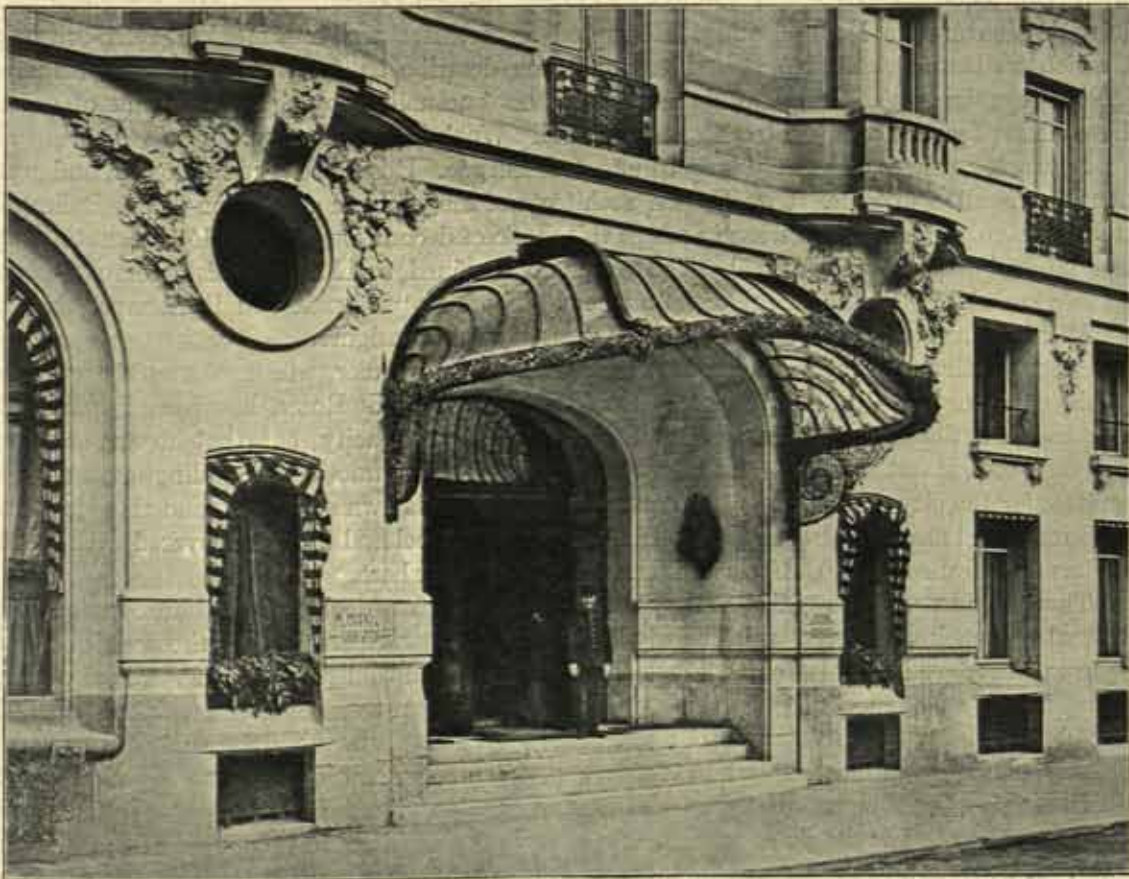
BIBLIOTHÈQUE NATIONALE, PARIS: NEW WING IN COURSE OF ERECTION.
(MM. Pascal and Recoura, architects.)

brought together by her architects of the seventeenth and eighteenth centuries. The British designer seems to have seized with relief that opportunity of studying building problems in accordance with his taste for analysis of detail; and even now, when most of you have acquired again a profound knowledge of classical elements, in many minds the battle of the Gothics and the Classics is not yet settled.

The British may be right, and possibly the French are wrong. Classical composition produces work which is complete and definitive, but the study of history teaches us that no man's work is definitive. The more we advance the quicker human institutions evolve. Composition

cannot foresee nor provide for these future evolutions, the direction and limit of which it would be unwise to contemplate. On the contrary, the Gothic analysis of detail allows these changes and additions brought about by altered requirements. Which of the two systems is right is a problem which the future alone will solve. As to the direction France is now taking, this is a question too dangerous to face. I shall only try to present just as they are a few facts which I cannot ignore.

There are signs that France is tiring of uniformity. Some ten years ago the municipal regulations of Paris, for the avowed purpose of obtaining variety in the distribution of the façades, were altered to allow greater projections for balconies or bay windows; they gave facilities for



HÔTEL LUTETIA, BOULEVARD RASPAIL, PARIS. (MM. L. Boileau and H. Taurin, architects.)
From *L'Architecte*, 1911.

the erection of dormer windows or turrets to add interest to the sky-line of street architecture. Villas, or little "châteaux," have abundantly expressed this modern research for picturesque grouping, and the design now before you of M. Hulot, with its effort towards realistic composition, has been greatly appreciated as being a relief after the stiff academical grouping of the early nineteenth-century Prix de Rome.

L'Art Nouveau seems to have taken in the mind of the critics of France, or of those who are anxious for her reputation, an importance which I fail to notice in France herself. Somewhere about 1895 a few designers, anxious to attract attention by a quicker way than their knowledge would naturally permit, sought to adopt that kind of originality which consists in

putting one's coat on the wrong side out! In the period of preparation for the 1900 Exhibition frivolities were permitted; this style was found amusing, and obtained in fact a certain success, but as the shortest jokes are considered the best in France as well as in England, l'Art Nouveau disappeared as quickly as it had come—it is already a matter of the past.

Some architects, however, have made earnest and sincere efforts in the search for a style suited to modern ideas; they are not to be confused with the partisans of l'Art Nouveau. Most of them belong to the small but very learned group of followers of Viollet-le-Duc, and they are headed by no less a man than M. de Baudot, the respected collaborator of Viollet-le-Duc, his successor in fact, as he continues to give at the Musée du Trocadéro the lessons of architecture which Viollet-le-Duc attempted to give at the Beaux-Arts School. At the church of Saint-Pierre-de-Montmartre M. de Baudot attempted an architectural treatment of ferro-concrete, of which he is a fervent advocate. Nor could one describe as *Art Nouveau* the attempts of M. Plumet, attempts at using Gothic methods without actually copying any elements of detail. These efforts I would compare to those of Mr. Philip Webb in this country.

New art, however, has lasted longer in Central Europe. It is there taken seriously, and great hopes are founded upon it. Two French architects of the younger generation—MM. Boileau & Tauzin—have found it interesting to adopt this mode of decoration in the Hôtel Lutetia they have lately built in Paris [p. 337]. The treatment is refined, and I see in this attempt a proof of the adaptability of the talent of its authors. The new "Magasins du Printemps," by the late M. Bigot, are treated in a manner characteristic of this designer.

Amongst the younger men, I must mention M. Tony Garnier, who professes his profound disdain of all architectural treatment. He obtained the Prix de Rome, however, I believe, in order to show that this disdain was not the outcome of incapacity, but that he was as clever as anyone else, if not more so. He now puts his theories into practice in building abattoirs and hospitals for the city of Lyons. M. Tony Garnier designs his own steelwork, and there is at the abattoirs a steel nave 250 feet in span. His own house of steel and concrete covered with rough-cast has appearances which, I feel, would not be foreign over here.

Theories, ideas, are as varied as they are numerous, a great deal more so than I can express. The real tendencies, however, which slowly lead the world onward are possibly those which do not express themselves in words and those which we are too blind to discern, but if words of wisdom are necessary as a conclusion to this study, they were given to me in a conversation with M. Nénot. I will try to translate them as accurately as I can remember them: "We must not trouble our heads too much about the future; we have to work for the present—let us do our best to satisfy the problems offered us—let us study the programme and the means of construction as sincerely and as simply as we can. As to style and architecture, the less we do of that the better. If we have any style or any architectural manner of our own, let it be (in the same way as Monsieur Jourdain, of Molière fame, spoke in prose) without knowing it."

DISCUSSION.

Mr. REGINALD BLOMFIELD, A.R.A., *President*, in the Chair.

Mr. H. HEATHCOTE STATHAM [F.], in proposing a vote of thanks to Mr. Billerey, said that the subject of his Paper had been one of great interest to himself for many years. For nearly a quarter of a century—24 years, to be exact—every May had found him strolling in the vast unpeopled solitudes of the architectural rooms of the Paris Salon. He was sorry to say that that part of the Exhibition was even more neglected by the specta-

tor than was our own architectural room at Burlington House. He had found nearly always that the central object in that part of the Exhibition was a great series of restoration drawings of some ancient monument. Looking back over his notes he found in 1885 M. Laloux' magnificent set of the Altis at Olympia. It was the work of a man who was at the same time a landscape artist and an architect. In 1888 there was M. Deglane's Palace of the

Cæsars; in 1889 M. Esquié's Hadrian's Villa; in 1901 M. Tournaire's Delphi. In 1904 there was a remarkable set by M. Patouillard of the restoration of the Island of the Tiber, which the Romans had the curious idea of making into the semblance of a gigantic ship. There were some records of it in Piranesi's drawings still. Then in 1898 there was a most remarkable set of restoration drawings of the cathedral at Rodez by M. Pailhès, with a perspective view in which every stone was treated as a separate problem, and which was calculated to fill English draughtsmen with mingled feelings of ambition and despair. It was sometimes said by critics of the *École des Beaux-Arts* that this kind of work was not a very good preparation for practical architecture; but it had this effect, he thought, it necessitated a thorough study of some of the greatest remains of antiquity, and studies of this kind filled the mind with ideas of a high standard. And in France this was bound to lead to something. Whenever they saw a man's name to a great set of restoration drawings they would be sure five or six years afterwards to see his name as architect of an important building. The Government never forgot him. There was something, also, in the great scale of things in Paris that must affect the architectural feeling. Look at the parish churches for example. Turn into such a church as that of St. Roch, or St. Sulpice, or Hittorf's grand basilica of St. Vincent de Paul, with its four rows of great marble columns—these were but parish churches, but they were on the scale of what in England would count as a second-class cathedral. That was one very great influence which their early studies had upon French architects; they had the example always before them of things on a large scale. What was the effect of that scholastic architecture on the tendency of architecture in modern times? He noticed in going through the Salons year after year that they were largely filled with *Prix de Rome* designs and designs by students of the *École*, all of them very good; but they rather impressed him as if he were seeing the same things over again. There was that drawback to this scholastic view of architecture, that while it kept everything up to a certain high standard, and was always dignified, it lacked variety. Among the buildings which had been referred to he would mention two. One was the *Musée Galliéra*, one of the most beautifully designed buildings of modern times, and representing very truly the best French treatment of classical architecture. The other was the *Petit Palais*, though he did not like all the outside details. No mention was made of its plan, but, as far as he knew, the plan was a new conception in architecture, and an admirable one. He admired what Mr. Billerey said about the tendency of the French, even in small buildings, to go to work to make a synthesis of the building, to work upon a symmetrical plan, instead of the way in which smaller buildings were so often put up in

England, putting the rooms together in a way which was convenient for the interior traffic, but letting the general design come together as it would—picturesquely sometimes; but the French system he thought was more like art. On the other hand, he suggested that we were better than the French in one way, and that is, that the picturesque had something to say. There were three sorts of modern French building which he could not sympathise with. The first was the lycées or Government schools. They looked like mills; and everyone who had read Alphonse Daudet's description, in "*Le Petit Chose*," of his own experience of them would feel that the building was just an outward expression of that cast-iron system of education. A capital education it was, but it was not given in a very humanising sort of manner. In England one felt that schools should be made homelike; they never seemed to have got that feeling in modern France; the schools were what he should call educational mills. The second class of building he was out of sympathy with were the Gothic churches, judging by the illustrations he had seen of them in the Salon. It was curious that though France was undoubtedly the cradle of Gothic architecture, the feeling for Gothic should have died out there; in the designs of modern country churches they had a sort of detail which to us in England was exceedingly disagreeable. The third type of building was, in spite of the one admirable example which Mr. Billerey had shown them, the French country house. When one saw "*Maison de Campagne*" in the catalogue, one knew what to look for: a house that seemed all fireworks. There was apparently no repose about them at all. In this respect he thought we might claim something for England; we had the sense of the quietly picturesque. He sympathised with what Mr. Billerey said about the importance attached to sculpture and painting as decoration in France; he was one of the greatest admirers of the sculpture by Rude, "*The Departure for War*," on the *Arc de Triomphe*. It was a pity the sculpture on the west side was more commonplace. But had there not been a little too much "*vigour*" in the French sculpture decoration? He thought it began with the 1900 Exhibition. They were apt to see figures with legs and arms sticking out on the cornice as if they were flung there by the wind; they were not sufficiently connected, architecturally, with the building. Puvis de Chavannes' paintings in the Sorbonne were the very perfection of decoration; his low tone of colour was subordinated to the architecture, and the design had a calm kind of style which prevented it from disturbing the architectural lines. But on that subject he would ask Mr. Billerey whether he could explain why, when the French determined on decorating the Panthéon, they turned loose their eminent painters, all used to different styles, and let them do what they pleased, without any central

motive at all, so that it was now a museum of curiosities. He could not conceive how, in France of all places, that could have been done. He would venture to suggest that while French architecture was superior to ours in their system of co-ordinating design, it wanted a little more reticence in detail. He remembered at the time of the Architectural Congress in England a distinguished French architect went with a party to Greenwich, and remarked when he saw Wren's very plain attic over the Hospital that it was "brutal." He could understand a French architect feeling that. But might not some of them say, in return, even in regard to some of the illustrations shown that evening, that they were too florid? Among the buildings which seemed to him to be perfect were the School of Medicine and the Musée Galliera, both by the same architect. These were real architecture, buildings which suited their purpose. If the French architects could keep to that intellectual habit of symmetrical design, and curb a little their exuberance in ornament, he thought they would come very near to showing us perfect modern architecture. There were many lessons we could learn from French architects, and perhaps there were one or two they could learn from us. Mr. Billerey's paper had been most interesting, and he was sure the Meeting would join with him in thanking him for his admirable exposition of the subject and for the illustrations he had shown them.

MR. EDWARD WARREN, F.S.A. [F.], in seconding the motion, said that Mr. Billerey's Paper was an admirable and most lucid exposition of current architectural thought and methods in France, and of unique interest as the expression of the personal view of an architect highly trained in France and imbued by race, by environment, and by tradition with the ideas of his nation, but who for the last few years had extended his appreciations and modified his impressions by intimate contact with English architecture and architects. Mr. Billerey was in the happy and unusual position of being able to regard the spectacle of both modern French and modern English art from within and also from without, a great advantage in forming a complete estimate, for, if it were true that "lookers on see most of the game," it was also true that participants were most familiar with its happenings. Mr. Billerey had been both able and, happily, willing to give them the benefit of his double view, which he (Mr. Warren), for one, had found to be extremely interesting and stimulating. They were all of them, he hoped, lovers of France, but lovers were constantly critical; where there was such an immense deal to admire, it was permissible to find something at any rate to question. What struck him as the chief excellences in civic architecture as he saw it upon his repeated visits to France, were the prevalent sense of symmetry, to which Mr. Billerey had so fully alluded, the feeling for proportionate

mass and scale, the general elegance and high finish, and the almost invariable sense of style—not archaic style, by no means always pleasing style, but a definite and pervasive character. In public buildings in large or even in smallish provincial towns, in Hôtels de Ville, Palais de Justice, Mairies, and public offices of all kinds, there was a definite civic type, sometimes harmonious and dignified, sometimes academic and stereotyped, frequently formal, stiff and cold. But there was almost always a sense of scale, an obvious civic intent, and a presentment of robust and imposing mass. The French handling of a public monument, commemorative, symbolic or other, almost invariably presented, in its bold salience, and courageous scale, and sometimes in its fearless defiance of static conditions, a tremendous contrast to the respectable little sculptural timidities we had to accept in Great Britain. And the French Municipality, which ordained such buildings or monuments, was generally careful also to ordain a sufficient and imposing site, to arrange for plenty of open space in front of the main façades, usually in the form of a "place," with lines of approach formally and imposingly distributed. There was now, as there had been in France for the last three centuries more or less, the happy instinct for wide, formalised spaces, which gave every chance to architecture and the architect. The average French railway station was not very beautiful to his thinking, but it had a style and an air, and it had almost always ample approaches, and a spacious and often quite dignified "place," punctuated and ornamented by statues or fountains. This gave the traveller, upon his entry into and departure from a town by railway, a definite impression of civic order, which could hardly be derived from the squalid yards of nondescript outline that spoiled our entrances and exits by railway in England. One had to recognise, at every turn in France, a much more highly developed national taste, a much higher sense of the importance of architecture than we could claim. We must for the present concede to her pre-eminence in civic architecture, especially in the design of large public buildings and all sorts of public monuments. In domestic, in collegiate, and, he thought broadly speaking in ecclesiastical architecture, we could hold our own with France. In the first of these three—domestic—he thought we could do more than hold our own, at any rate in the domain of the country house, big or little. He was fortunate enough to have several friends amongst French architects, and they all generously and cheerfully conceded the palm to England for domestic buildings. They frequently, indeed, expressed unbounded admiration for the ingenuity of plan, the quiet harmony of exteriors, and the dignified comfort of interiors. "*Le confort Anglais*," as exemplified by modern English houses won their admiration, and they expressed perpetual surprise at the care and thought

bestowed by our architects upon even minute details. "Vous dessinez jusqu'aux clous des portes," said a French architect to him the other day. We did indeed design the door-nails, and we ought not to have to. In collegiate architecture, to which he had devoted some study in France as in England, he thought we arrived on the whole at happier results than our French brethren. Modern collegiate buildings in France—collèges, lycées, and university buildings—were frequently on a great scale, well thought out for practical requirements in most particulars, but singularly ponderous and gloomy of aspect, chill and stern, impressive indeed, but without anything of the kindness, the semi-domestic and genial appeal, which marked so many of our collegiate buildings in Britain. In church building, the French architect seemed to him to be generally too much obsessed with monumental effect—with monumental opportunity. His church interiors were apt to be stern in effect, and hard in detail, academic and unsympathetic. They showed as a rule no trace of inspiration from the noble old churches in which his country abounded, no reflection of their impressive but kindly beauty. Broadly, he thought the difference of point of view and achievement between French and British architects was less one of training than of racial characteristics, for the national view of architecture and its necessities had, in each case, begotten the training. The Frenchman, indeed the Latin generally, was town loving and town dwelling, frequently even detesting the country except for his infrequent holidays. The average Briton, in his heart of hearts, loved the country, and cared less or little for the town. He would not accept his town as finally desirable, he named his little suburban habitat with sentimental rurality, he wanted his own little home and garden; he aspired, if he made "a bit of money," to his ultimate little place in the country. He was thus less critical of the aspects of his town. The town was his workshop, what did it matter what it looked like? When towns were smaller and the country was always close at hand, he loved towns better and adorned them well in his simple way. He was, however, awaking to civic ideals, to the need of dignity in civic buildings, and of sane and ordered distribution of towns, and he had learnt, and was learning, much from his neighbour across the Channel. Where it was a question of fitting a building to its casual environment, the Briton seemed to him more often sympathetic to surroundings than his French brother, and that probably for the very reason that the latter had a more definite architectural ideal, a more positive professional faith. We had much to learn from France in thoroughness of training, and in the convinced acceptance of a contemporary manner. France, he thought, might aptly take lessons of us in individuality and elasticity of expression, and the sympathetic handling of detail. There was a marked

tendency at this moment, begotten of our admiration for things French, to copy as exactly as possible, and without any translation as it were, French architectural fashions, and to dot our streets and squares with Franco-Greek elevations. That was a pity, and an absurdity. If one must be Greek, if one must adopt a windowless, chimney-less, stairless manner of building, evolved from hard materials and a brilliant climate by the alien needs of an alien race, and apply it to the much-windowed, much-chimneyed, infinitely staircased requirements, to the soft dull skies and soft dull materials of Great Britain, was it necessary to seek the transposition at second hand? "Autre pays, autres mœurs." If we must be Greek, let us be Anglo-Greek on our own lines, and pay to our brilliant neighbour the better and more intelligent compliment of imitating her ideals and her methods, rather than making imitative travesties of her achievements.

SIR RICHARD PAGET, Bart. [*Hon. A.*], suggested that one of the greatest lessons we could learn from French architecture, and especially from Mr. Billerey's admirable exposition, was that definiteness of aim was a quality overwhelmingly valuable in art. He thought that the real strength of the French architect was that he had got a quite definite object at which to aim. He had three objects—symmetry, refinement, and continuity; the continuity which was learnt by the admirable method of working in studios, so that generations were perpetually overlapping. But he felt that for our purposes nowadays there was need of a fresh aim. There was evidence that the old aims which satisfied former generations were not enough for us. And that came out again in Mr. Billerey's paper. He mentioned how various attempts had been made this way and that, so that people did not know whom or what to follow. There was recently published a remarkable book entitled "The Energetical Imperative," by Professor Ostwald, the eminent chemist. The title did not suggest much in connection with architecture; but he believed that the book itself had an important bearing on architectural ideals. The author's thesis was that there was only a certain limited amount of energy in our universe to deal with, and that energy was always deteriorating. Therefore the one fundamental aim and object of mankind should be to use the energy which was available to the best possible purpose and with the least possible waste. It had got to go to waste in the end, but we must see that we pass it through proper conduits, so that it should do the maximum amount of work. For example, Professor Ostwald suggested that there was an enormous waste of energy in printing books, there being so many different sizes which were of advantage to no one; there would be a much greater saving of energy, and a greater possibility of diverting energy into useful and valuable directions, if those sizes

were limited. He also discussed the difficulties of language, the waste of time in connection with scientific work and the work of the world due to its being conducted in so many different languages, which people had first to learn. Professor Ostwald was therefore a disciple of some form of universal language. We could get some advantage by applying that principle to architecture, to see if it would not offer a definite aim such as the aims of olden days, which were absolutely sufficient to the architects and craftsmen of those times. Applying that principle to architecture, it would be seen that there was an immense amount of work done at the present time which would not be justified on any logical principle. Whereas there were a certain number of things done with the idea of what we called efficiency, it might be possible to translate efficiency into a more definite ideal than we do at present, and to feel that it was a crime to do anything which represented either waste of labour in doing work, or making unnecessary labour after it was done. Many of these principles he thought might be applied to architecture with very great advantage. He was very often conscious, in his walks abroad, of the omission of that principle. He had been to garden suburbs where he had knocked his head against oak beams; he had been into Government offices where it was so dark that the electric light had to be kept going in broad mid-day. He had had many such experiences, and he could not help thinking that this was not good architecture, that it was bad craftsmanship to do a thing which was not really the best for the purpose in hand. Another thing he would like to suggest was that if architects were agreed on any definite method by which a real advance could be made in architecture—and the chances for advance were unspeakably great, with all the novelties of material and novelties of ideal—they could develop real, fundamental changes due to their ways of looking on life, and there would arise a greater architectural revival than any which had been in the past. At present we were fumbling in the dark with the Neo-Greek and Neo-something else and all those different reversionisms to antiquity which Mr. Billerey so aptly called archaeological pedantry. We ought to be thinking for ourselves, evolving really great styles which were needed to lead to great ideals, and so reflect what was growing up amongst us. But supposing that the architects had got those definite ideals, he did not suppose they would be able to put them into practice, because they had to satisfy, not their own inner consciousness, but their clients as well. It was the client who really wanted converting. He suggested, therefore, as a practical addition to the discussion, that supposing architects were agreed as to some of the things which ought to be done, the first thing they ought to do was to try to educate the public. That might be done through the medium of the press, which was always ready for

any new idea. If the press were appealed to—assuming that the architects were agreed as to what the appeal should be—there would be little difficulty in getting the general education of the public started, so that the public would know in what frame of mind to consider any new architectural proposition which was put forward. Some present may have seen that picture by Professor Adshead in *The Times* of an arch he (Sir Richard) ventured to suggest at the end of the Mall. Some one had criticised that arch very violently on the ground that it had too many windows in it. Seeing that the arch was intended to be an office building, it seemed to him to be as reasonable to object to it on the ground of having too many windows as it would be to object to the Crystal Palace because it had too much glass in it. The point was not that it had too many windows, but whether, seeing it ought to have an enormous number of windows, those windows were treated in reference to the building, that they gave it that kind of monumental effect which was desired if the building was to serve a double purpose. He did not know whether the public would understand that yet, because they thought that the ornamental and the useful could not be combined. The public had not been to New York, and did not know the possibilities in that direction. It was in that kind of way that a real campaign of instruction would have to be carried on if architecture was to get out of the ruts in which it was so apt to rest. The mere ringing of the changes on the old styles, as if we had no ideas of our own, was not all that was necessary.

MR. R. PHENÉ SPIERS, F.S.A. [F.], said that his principal claim to address the meeting was that fifty years ago, in March 1863, he read a Paper on the same subject as Mr. Billerey before the Architectural Association, in the adjoining room. The title of his paper was "The Architecture of Napoleon III." At that time the style known as the *Néo-grec* was predominant, and Mr. Billerey had referred in his Paper to, and shown slides of, some of the chief buildings in that style, such as the Library of Ste. Geneviève by M. Labrousse, the Ecole des Beaux-Arts by M. Duban, and the Prefecture by J. L. Duc. Mr. Billerey had referred at length to the Opera House by Garnier, and as he happened to be in Paris when the competition was held, and had worked on one of the designs and visited the Exhibition, he would have liked to refer to it, but as the hour was so late, he would put in writing what he had to say and send it to the JOURNAL. One new feature which had appeared in Paris during the last thirty-five years, viz. the bow-window, he should like to refer to. He recollected the history of the first bow-window erected. When J. L. Duc came over to London to receive the Gold Medal, he (Mr. Spiers) was invited by the Hon. Secretary, Fred. Cockerell, to meet him at dinner at his house in

Manchester Square. As M. Duc was unable to speak a word of English he (Mr. Spiers) was placed next to him, and he recollected that after dinner M. Duc turned to his host and said, "By the way, there is a little service you may be able to render me; three or four days ago, when in my office at the Prefecture, a card was brought to me of a visitor whom I did not know. He said that he had a great admiration for my work, and that he wanted me to design a villa for him on a piece of ground he had purchased near Paris. I explained to him that my whole time was devoted to the work of the Prefecture, and that I never sought work outside. He, however, pressed me so much on the subject that I at last consented, and, producing a plan of the site, he entered into details as to the accommodation he required. The drawing-room was to overlook the lawn, and he desired to have there a bow-window. I told him I did not know what a bow-window was, and he said it was a favourite feature in England, of which he had seen many charming examples; it is here that I want your assistance. Can you tell me what a bow-window is?" Cockerell laughed and said he would furnish him with tracings of one or two examples, so he was satisfied and relieved of his perplexity. The villa was built, and its window was the first bow-window built in France. Since then the bow-window had been adopted in Paris, but the interpretation was quite different from that which obtained in England. Here the feature was adopted to give more light, and to allow of prospects for the side as well as the front. In France they run up piers carried on corbels to treat the wall surface as a new "motif" and then cut a window between, but the outer reveals of the window are so deep that there is less light than in the ordinary window, and there are no side windows. The French appeared to have been in trouble in naming it, as there were three W's in bow-window, and no W in the French alphabet. They compromised the matter therefore by spelling it *Bovindo*, which had fewer letters and was more easily recognised. It had been of great interest to him to hear M. Billerey's Paper and to see the magnificent series of slides he had shown, and he supported heartily the vote of thanks.

The PRESIDENT, in putting the vote of thanks, said they had been very fortunate in getting Mr. Billerey to come to them, and they had all been very much impressed by what he had said. Some of the criticism, too, in the discussion had been very valuable. Mr. Warren had pointed out the immense importance attached to scale by French architects, and very rightly so, as one of the most essential qualities of architecture. Mr. Statham had also given them valuable criticism, but he was surprised to hear him say that the fresco by Puvis de Chavannes must be considered the last word in decoration because it was low in its scheme of colour. When one considered Rubens

on the one hand, and Tintoretto on the other, to be low in tone hardly seemed to be the last word in colour decoration. With regard to the gloominess of the French lycées—that is, the older buildings, to which both Mr. Statham and Mr. Warren called attention—it must be remembered that they were built for a different purpose. Many of them were old Jesuit colleges, and it was hardly fair to criticise them as modern educational establishments. Mr. Billerey had given them an admirable survey of the French architecture of the last hundred years. His Paper was logically arranged, perfectly clear, and very sound in criticism. He was glad to hear the way in which he handled Viollet-le-Duc. Those who were familiar with French cathedrals would be very glad that he had not spared him. Some of Mr. Billerey's remarks had a particular bearing on the problems which were exercising us at this moment—for instance, the subject of education and the question of ateliers. We ought not, he thought, quite recklessly to apply the system of another country to a different position in our own. Mr. Billerey had remarked that the French school, the great *École*, taught nothing; it set out to teach nothing. And M. Guadet had said it was one of its qualities that it was not there to teach, but for other admirable purposes. In point of fact, it was a ring in which these gallant young Frenchmen fought it out, with the Professors to hold the bottle and keep the ropes. Mr. Billerey had told them that in the ateliers they did splendid work, but the student had rather to scramble for his knowledge. And on that showing it was difficult to see where the French architects acquired that great technical skill which they undoubtedly possessed. Mr. Billerey had told them that the function of the *École des Beaux-Arts* was to do away with the difficulties of expression. That was the real achievement of the French training, and that, as Mr. Billerey said, was the real French tradition. But so far as English architecture was concerned, and the training of English students, the solution must clearly be the French solution; it must be solved in terms of French architecture and French language. Therefore it was difficult to apply that to English students. Some quite different solution might be wanted, and that was the point which made English architects pause when they had to consider the training which was best suited for the generation of students who would take their place. He thought, with regard to this difficult and thorny question, that though the ateliers might be useful, the real solution was to be found in a great central School of Design, to which the schools we already had, and those which we might have, would lead; and he should like to see that school developed out of the schools in the Academy, so that all the arts might work side by side. In pursuance of that he would call attention to the brilliant success of the students of the Academy

School of Architecture at the last Prize-giving. There was only one other point to which he would call attention, viz. Mr. Billerey's reading of history, in which he (Mr. Blomfield) did not entirely agree with him. Mr. Billerey remarked that the English had apparently a sort of natural genius for Gothic; but that the French, on the other hand, had a natural genius for monumental architecture. Unless he did Mr. Billerey an injustice, he thought he must have meant by this some version of Neo-Classic architecture. And Mr. Billerey attributed this predominance of the French nation in Neo-Classic architecture to the fact, as he alleged it to be, that the French were a Latin people. In the first place, no one who was familiar with the work done in England at the end of the seventeenth century and in the eighteenth century—Whitehall, Greenwich Hospital, Hampton Court, St. Paul's Cathedral, or the great country houses of the eighteenth century—would admit that we held a place second to any nation. He was sure Mr. Billerey himself would modify his opinion on that point, and would allow, also, that English architects had some aptitude—it may be small, or it may be great—for monumental and Neo-Classic architecture. Then there came the generalisation that the French had shown this great aptitude for monumental architecture because they were a Latin people. He would ask Mr. Billerey how he accounted for the fact that the French people were predominant in Gothic architecture. Where did the Latin come in during that magnificent development of art which lasted in France for some five centuries? To drive it closer, he would come back to the question, "What is the French people?" The French people at the dawn of history were composed of three main races: the Iberians, who survived in the Basques; the Ligurians, who had disappeared into space; and the Celts, who were the predominant race. Then came the Roman domination, and they settled down comfortably. Then there was the succession of barbarians—the Visigoths, Franks, and Burgundians fighting it out together. Where, then, did the Latin come in? The Latin had disappeared at that time, and the Celt was the civilised person, the man of possibilities, held in the background by these hefty barbarians. But it was the Celt who reappeared in Gothic architecture, and Gothic architecture was the inspiration of the Celt. The wheel went round again after four hundred years, and the Latin element, which also had its place in the French race, reappeared, and there was the Renaissance in France. It took the French, even with all their genius, 150 years to get back to anything like an expression of Roman architecture. So he thought that Mr. Billerey's generalisation would have to be modified. He would not go further into this speculation. He was sure they all felt very grateful to Mr. Billerey for his admirable address. It was full not only of interesting

history, but also of the most excellent criticism and suggestion.

MR. BILLEREY, in reply, said that if he had been able to evoke in the minds of his audience an appreciation of French architecture only approaching but a little his own love for the art of Great Britain, he should feel more than recompensed. There could exist in art also a sort of *entente cordiale*, and he should feel quite happy if he could in any way contribute to that. There had been some criticism of French work, and appreciation of it. He did not wish to defend French work, any more than to depreciate other work. French work had been, he thought, a correct expression of the French people, and if there were something which did not fully satisfy the aspirations of English architects, it might be that the demand was not what it would be here. Country churches in France might not be what they were in England, but the religious feeling in France was possibly not as strong as it was here, or was of a different character. It had also been objected that there was too great elaboration of detail in some of the French modern buildings. The Opéra was, perhaps, the start of that kind of elaboration, but it had to be the expression of a society which he might call vulgar—a society which demanded ornateness. Since then that society had disappeared, and French architecture had become wiser and much more refined in expression. He would not defend the arrangement of the decorative paintings on the walls of the Panthéon. They might not be altogether happy, but most of them were very beautiful works of art by such men as Puvion de Chavannes, Bonnat, Benjamin Constant, Jean-Paul Laurens, &c. The question of the teaching in the ateliers had been raised, and he would only repeat that there was no teaching. Official teaching at the school would prevent the natural development of architecture; the school brought together the teachings of all the masters. The master was absolutely free in his studio; he could teach what he liked. The school provided work for the students of any calling who competed for the degrees and diplomas. The school provided certain lectures on special subjects, which were extremely good, but they were not teaching in themselves. The "Philosophie de l'Art" by Taine was a résumé of his lectures at the Beaux-Arts School. The "Théorie et Eléments de l'Architecture," by M. Guadet, was also originally written for his lectures there. The lectures were public, and anybody could attend them. As to the natural tendency of French architects towards monumental architecture, he did not think the cause of that was that the French people were Latin; he thought they were Latin because they lent themselves so readily to monumental architecture and classical grouping. The French had, indeed, been excellent Gothic builders, but they had caught the Renaissance spirit probably more readily than

any other nation, and the method of adding one element to the other without proportionate relation or orderly distribution is no longer French. The Gothic revival did not take at all in France. It had hardly any influence. What France would become in the future he did not know; but, for the time being, France was thoroughly classical. With reference to his own very sincere appreciation of British classical work, he would refer to a paragraph of his Paper concluding his comparison of the two nations.

Decorative Painting.

MR. STATHAM writes:—

The President took exception to my reasons for thinking Puvis de Chavannes the greatest of decorative painters. Let me explain my meaning a little better. My position is this: that when a painting is to be essentially a mural painting, forming part of the architectural decoration, *you must not paint away the wall* by a picture approaching too near to realism. For a picture to keep its place as mural decoration it must give up something of its pictorial character. The French, for the most part, understand and act on that principle. M. Henri Martin, who is still fortunately living, is another master of the art, though in a very different style from Puvis de Chavannes; there is warmer colour than in Chavannes, but it is all kept flat and conventionalised. The French paint decorative landscapes sometimes, but they take care not to make them too like landscape painting; it is landscape composition without landscape reality. Calvé's "Calme du Soir," in the Salon of 1911, was a perfect example of the kind. But no one could class the works of Corot, Harpignies, or Didier-Pouget as decorative landscape; they are something more. For this reason I do not call Rubens a decorative painter in the true sense of the word. He is too strong in colour and too riotous in line. A series of his pictures has been arranged as a decorative scheme in one of the new galleries of the Louvre, but I do not think they were painted with any such intention; they are essentially easel pictures.

The Paris Opera House.

MR. SPIERS writes:—

M. Billerey has referred in detail to the new Opera House by Garnier, and as I happened to be in Paris when the competition took place it has occurred to me that some further account of it might be of interest. The programme was issued in December 1860. Three months were given for the preparation of the designs, which were open to all competitors and not confined to French architects,

and five prizes were offered, varying from 6,000 francs (£240) to 1,500 francs (£60).

One hundred and seventy-one designs were sent in, some of a very primitive character, in which attempts were made to describe in writing what their authors were unable to draw. Others enclosed their theatre in great masterpieces, such as the Parthenon, or the Temple of Neptune at Paestum. They were all publicly exhibited with the exception of the five to which the prizes were awarded. The first prize went to M. Ginain, the architect of the Ecole de Médecine, of which a slide was shown by M. Billerey, and the others to M. Crépinet, Garnaud, J. L. Duc, and Garnier. A new programme was drawn up entering into more detail, as the committee had acquired more knowledge of what was wanted. M. Ginain, placed the first, may have concluded that all he had to do was to follow more closely the new programme. Garnier, the last, recognised that he would have to begin again, and he went off to Bordeaux to study the theatre built there by Victor Louis in 1789. In the second competition the design of Garnier was unanimously pronounced by the jury to be the best, and to him was given the execution. M. Billerey stated that the Emperor and Empress proposed a design without a plan, in which the features of the Garde Meuble by Gabriel were introduced. Unfortunately the Emperor went further. A large model was made of Garnier's design, and the Emperor decided that the front must be raised and made more important. This decision is responsible for the heavy attic story which was introduced and the masking of some of the main features at the back, notably the great *salle* at the back of the *foyer* shown in its semicircular front, and which is now scarcely visible above the attic story. Garnier was of opinion that the character of the building and its distinction ought to be shown in the exterior, and this has always been the principle on which the French architects design their buildings, and to which M. Billerey constantly referred in his paper. The most notable features shown in M. Billerey's slides were the magnificent staircases with balustrades and newels in forged steel, of which we have no examples in English work. I think the French were the first to employ ironwork in their roofs and to decorate them accordingly. M. Billerey showed us slides of the Library of Ste. Geneviève and of the National Library, both by Labrousse, and I remember that in the new front of the Ecole des Beaux-Arts by M. Duc, built in 1861, all the girders in the vestibule are shown with decoration appropriate to the material.

It is probably not generally known that Garnier presented reproductions of the whole of the drawings of the Opera House to the R.I.B.A., and they are to be found in the Library.

M. HULOT'S DRAWINGS AND THE GRAND PRIX DE ROME.

BY the courtesy of M. Bonnat, Director of the Ecole des Beaux-Arts, Paris, the set of drawings which carried off the Grand Prix de Rome in 1901 were lent for exhibition at the galleries of the Institute for about a week from Friday, 14th March. The selection of M. Hulot's drawings was a happy conception, as his work is already known to us through the magnificent series which he made of the Acropolis and Temples of Selinus exhibited four or five years ago in the galleries of the old Water-colour Society. This is also the first time that the actual drawings for the Grand Prix have ever left Paris, and the occasion is very opportune, as it will have enabled students to see the nature and amount of work required in Paris for a similar prize which will shortly be given to English architects in the competition for the new English Travelling Studentship in Rome. The French Travelling Students have, of course, the tradition of nearly two centuries in the production of such work, for the first Grand Prix was given in 1720, and, although there have been seven occasions on which it was not awarded, up to the present day 192 Grand Prix students have been elected.

M. Hulot, whose drawings have been exhibited, was a pupil of Marcel Lambert, Grand Prix of 1873, who for his "*envoi*" of the fourth year of his studentship selected the Acropolis of Athens, and sent measured drawings of all the buildings of the Acropolis, with a conjectural restoration of them. It would be difficult, therefore, to find a better authority on the subject of Greek architecture, and M. Hulot evidently profited much in the excellent training he received. M. Hulot, who was born in Paris in 1871, entered the Ecole des Beaux-Arts in 1888, and passed into the first class in 1891; in the following years he carried off seven important prizes and was five times admitted *en loge*, viz. as a Grand Prix competitor. As in 1900 he carried off the prize founded by the American architects who had studied in Paris, it was a happy coincidence that the subject given in 1901 should be "The American Academy in Paris," of which the programme is appended [p. 348].

In order to compete for the Grand Prix, the student must be of French nationality, under 30 years of age on the 1st January preceding the competition, not married, and must be recommended as capable by his patron or professor. There are two preliminary competitions; from the first are exempt those who have been *logistes*, viz. competitors in previous competitions for the Grand Prix or who have been awarded important medals or prizes in the first class of the Ecole. For the first competition the programmes set are of a simple character, such as the principal entrance doorway to a museum, library, or hippodrome, or the *façade* of a theatre. Twelve hours are given, 9 a.m.-9 p.m.,

and the design is worked out in the school in separate recesses, called *loges*, about four to five feet wide and the same depth, each recess being lighted by a window and all controlled by an inspector or guardian. The number of students selected in this first competition depends on the number already exempted so that the total number in the second competition shall not exceed sixty.

In the second competition the programme is more extended, and the subject may be the vestibule and staircase of a museum, a maritime prefecture, a palace for the Institute of France, or a design for a national and colonial exhibition by the side of a river or lake: in all cases in the programmes are laid down the requirements, the area to be covered, and the scale for the drawings. Twenty-four hours is given for this competition, viz. 9 a.m. to 9 a.m. on the following day. [To work all night is not unusual in the French ateliers; the students who are behindhand in their work and the comrades who are going to assist them go out before midnight to sup, and then return to work till the small hours of the morning, when other students come in to stretch the drawings on the strainers and paste on the grey borders.] The drawings for this second competition are all made in the *loges* under supervision, and are handed in as soon as they have completed them.

From the sets of designs made in this second competition, not more than ten are selected for the final competition, which takes place in separate studios in the Ecole des Beaux-Arts. Four days and three nights are given to prepare the design for the Grand Prix. In this case the programme is still more extended, and the subject may be a museum of artillery, a palace for exhibitions and fêtes, a Burlington House for the learned Societies, a palace of justice, a palace for the governor of Algeria, a school of medicine, or the vestibules and staircase for a royal palace.

On the afternoon of the fourth day the competitors make tracings of their designs, which they are allowed to take away with them; the drawings are then collected by the secretary or inspector of the school, and tracing paper is pasted all over them and the stamp of the Institute affixed to the tracing. When thus protected they are handed back to the *logistes*, who take them to their respective studios in the school, but are not allowed to take them away; they may be called for at any time, and are eventually exhibited with the finished *projets*. The tracings already made enable the student to set out his design in the atelier where he has been trained, and to obtain the advice of his patron or professor. Students may also call in the assistance of their comrades to black in plans, etc., but none of the studies made out of the school are allowed to be taken into their school studios.

The period allotted for the execution of the completed design (*projet rendu*) is 110 days, nearly four months, or fifteen weeks and five days. [As few of the students would be able to maintain

themselves through so long a period, they return to the offices where they have already been working, and it is in this way that they acquire their acquaintance with actual building construction.] It has already been felt, however, that the *logistes* should receive some kind of indemnity during this competition, and the sum of 200 francs is given to them. The painters and sculptors get 300 francs, as they have to employ models, who alone are admitted into the studios.

Those who saw M. Hulot's drawings in the Institute Galleries will be able to judge of the nature and the amount of work required from the students in the allotted time. They do not go to their studios regularly, however; in fact, I am informed that the drawings by M. Hulot were done in seventy-three days. The *logistes* have first to study their designs at the atelier, frequently done in the evening, and they have also to earn their living in various offices. It is only, therefore, when they have quite decided the principal elements of the plan that they start the finished drawings in the school studio.

All the drawings are required to be inked in or coloured, the walls of the plans being always tinted black; and the correct shading at 45° is always adhered to. It is not the custom to project the shadows of the buildings roofed in, as is occasionally done here in England. If the building is raised on a plinth the shadow of the whole block may be tinted in.

The programme set in 1901 required in addition to the main building a series of isolated blocks for the studios, and the variety of design and composition of M. Hulot's "*envoi*" were of great interest, especially when we remember that in his restoration of the town of Selinus there was a similar variety of design in the houses perched on the slope of the hill of the Acropolis, as if in recollection of his Grand Prix design.

So far we have dwelt only on the competition. It may be interesting now to inquire into the future career of the Grand Prix student when in Rome, his further travels, and the work he is expected to be engaged upon at the Villa Médicis and to transmit to the École des Beaux-Arts.

The award of the Grand Prix is made known about the middle of September, and all the drawings with the original sketch are exhibited afterwards at the École des Beaux-Arts. The prizeholders are required to leave Paris on the 20th December to visit Genoa, Milan, Florence, or other towns, and to reach Rome not later than the 20th January. On their arrival they proceed at once to the Villa Médicis and call on the Director, who is always a painter or a sculptor. They deliver their official papers to him and he gives a lecture on the regulations and rules of the Villa. They then take possession of the rooms allotted to them. The rooms are large and lofty, and constitute their bedroom, sitting-room, and studio. With the exception of the morning coffee, all the students take

their meals together at one common table. When the Villa is full there will be four architects, four painters, four sculptors, four engravers, three medallists, and two music composers.

Every travelling student on leaving Paris is given 600 francs for the cost of his journey to Rome, a like sum being given when he returns home to Paris on the termination of his studentship. The annual payment to each student is 2,310 francs, of which 300 is retained in reserve; and in addition the sum of 1,200 francs is put down for the meals. Besides this there are other payments, 50 francs for excavations in the first two years, 600 francs in the third year, and 300 francs for the last year. Architects who go to Athens receive a special indemnity of 800 francs.

When in Rome the students have to return to the Villa by midnight. Students are not allowed to leave Rome without the permission of the Director, and the first year they are only allowed to travel in Central Italy; in the second year they may extend their journey to Italy generally and Sicily, and in the third year Greece is included. When travelling they receive 267.50 francs per month because they have to pay for board and lodging and cost of travelling. The work required from the students and transmitted to Paris at the end of each year is the following:—

In the first year: (A) General Studies, and (B) Special Studies of details of some ancient monument of Rome and Central Italy: four sheets, quarter scale.

In the second year four sheets of details of (A) Ancient Monuments in Italy, one of which must be shaded and the second the same subject restored, and (B) some details of the Renaissance. In the third year (A) two drawings in detail, quarter full-size, of some ancient monument in Italy, Sicily, or Greece, and in addition drawings showing the *état actuel* of the whole or part of the monument; and (B) Decorative details, external or internal, or *ensembles* of the architecture of the Middle Ages and the Renaissance.

In all these cases the drawings remain the property of the student and are returned to him, but he is required to supply tracings of all of them to the École des Beaux-Arts. As a fact they form only a portion of the work done by the students during their stay in the three countries.

In the fourth year the student has to measure some ancient building or assemblage of buildings in Italy, Sicily, or Greece, and to send drawings of the *état actuel*, with conjectural restoration of the same, and various details. This must be accompanied by an historical description of the buildings and a report of the work. These drawings become the property of the State, but they are allowed to publish them, and in doing so are assisted from the funds of the Institute of France.

Many of these publications are in the Library of the R.I.B.A., and among them may be mentioned the *Thermæ* of Caracalla by Blouet, the *Thermæ*

of Diocletian by Paulin, the Temples of Olympia by Laloux, Delphi by Tournaire, Pergamon by Pontremoli, Sélinonte by Hulot, Delos by Nénot, Spalato by Hébrard, and Ægina by Garnier.

On their return to Paris, generally at about the age of thirty-four, the Grand Prix students may receive a post as inspector of one of the Government buildings with a small salary, which enables them to start an office and commence work on their own account; but unless they have private means they are sometimes hard put to it. Garnier, I believe, was in very low water when he received a commission from the Prefect of the Seine to paint two water-colour drawings of the Hôtel de Ville for presentation to Queen Victoria when she visited Paris in 1855. These drawings are now in the Library at Windsor Castle. The Grand Prix students are, however, magnificent draughtsmen, and during their travels must have made a large collection of water-colour drawings, so that they may be able to dispose of these. I do not know any instance, however, of their having thrown up professional practice and become artists, as is often the case in England.

R. PHÉNÉ SPIERS, F.S.A. [F.]

PROGRAMME OF THE COMPETITION FOR THE GRAND PRIX DE ROME, 1901.

[Translation.]

AN AMERICAN ACADEMY IN PARIS.

The United States is supposed to be organising in Paris a building to receive the most distinguished scholars of the Universities during their sojourn in Paris in order to carry out their scientific, literary, archaeological, and artistic studies. They have secured an important site, slightly on the slope, near the Bois de Boulogne, from the expropriated land of the fortifications. It is desired that the building should be an Institute similar to the one we owe to the liberality of President Thiers' sister, to the French Academy in Rome, to the Archaeological School in the same city, and to our "Ecole d'Athènes."

The young men staying there would be pursuing studies to their own liking; they are no longer pupils, but young masters who are already trained and able to undertake personal work in the different lines in which they have specialised.

They would live in the most complete freedom, curtailed only by the necessities of decency essential to the dignity of such an establishment, which to some extent includes life in common.

There would be, near the only entrance of a large garden, a building to contain the common rooms—that is, a kind of club, with a large restaurant and table d'hôte, also private dining-room, café, lecture-rooms, meeting-rooms and reception-rooms, exhibition-room for ancient works of art, painting, sculpture, architecture, and engravings, to be used for studying purposes; other rooms for exhibition of new works before their despatch; a small concert-room for musical studies, and lecture-room for literary, historical, or scientific men; collection-rooms to receive specimens or objects useful to the scientific studies of the *pensionnaires*. The whole to be accompanied by vestibules, waiting-rooms, lifts, and all necessary servants' quarters.

A special building—which would include, besides large living-rooms, large reception-rooms for official parties given to guests of the American colony and to Parisian society connected with the institution—would be used as a house for the Director and his family. Servants' quarters,

coachhouses and stables, and all that is necessary to a large house would complete the building.

About twenty members would be provided with rooms for their studies, although they would live outside in private "pensions" or hotels.

Buildings for young men whose profession does not require much room, and who would be satisfied with small flats on different floors of two to three rooms each, would be provided; they should have complete arrangements for comfort and convenience, and should be pleasing and well designed. These buildings would contain about forty separate and independent flats.

Twenty detached pavilions of varying sizes would be provided for artists, with studios and special accommodation—a few might be grouped so as to be used by three or four colleagues.

Twenty small houses for scientific men would require laboratories and varied aspects.

Porter's lodge, small stables, coachhouse for general use, spaces for sporting purposes, shelters, music pavilion, and decorative monuments would complete the composition, and woody and garden-like surroundings would frame these small houses. The whole should be treated in a decorative and architectural way.

The site is 200 metres one way, and 400 the other way (the long axis being north-south). Scale 0.002 m. for the plan, one elevation and two explanatory sections; schemes should be presented double scale, 0.004 m.

In the plan walls must be tinted by brush or inked in; elevations washed in or inked in.

Honours and Appointments.

MR. W. D. CARÖN, F.S.A. [F.], has been granted His Majesty's Royal licence and authority to accept and wear the insignia of Knight of the First Class of the Order of St. Olaf, a distinction conferred upon him by the King of Norway in recognition of his work in connection with Trondhjem Cathedral.

MR. REGINALD ST. A. ROUMIEU [A.], President of the Huguenot Society of London, has been appointed by His Majesty's sanction Knight of Grace of the Order of St. John of Jerusalem in England. This distinction is highly prized amongst philanthropists in connection with ambulance, hospital, and other charitable work. Mr. Roumieu, who has been repeatedly elected a Member of the Council of the Architects' Benevolent Society, is a son of the late Robert Lewis Roumieu, a greatly respected Fellow of the Institute and sometime Member of the Council. His great-grandfather, Abraham Roumieu, was an architect in practice in London in 1769.

Books Received.

- Building Construction, in 2 vols. Vol. II. [The Architects' Library.] By John H. Markham [A.], Edwin Gunn [A.], Alan G. James, Herbert A. Satchell [F.], F. M. Simpson [F.], J. D. Crace [Hon. A.]. With 142 illustrations. 8s. Lond. 1913. 10s. 6d. net. [Longmans, Green & Co., 39 Paternoster Row.]
- Curtis on the Valuation of Land and Houses. 4th edit., rearranged, revised, and enlarged. By Sydney A. Smith, F.S.I. 8s. Lond. 1912. [Estates Gazette, 34 and 35, Kirby Street, Charles Street, Hatton Garden.]
- Light and Illumination. Their Use and Misuse. A few General Recommendations. Reprinted from "The Illuminating Engineer." Large 8s. Lond. 1913. 3d. net. [Vacher & Sons, Ltd., Westminster House, S.W.]
- British Fire Prevention Committee—Red Book No. 174.—Fire Tests with Roof Coverings of Asbestos Cement Corrugated Sheets: Report. 8s. Lond. 1913. 2s. 6d. [8 Waterloo Place, Pall Mall.]

CATALOGUE OF THE DRAWINGS ATTRIBUTED TO INIGO JONES, PRESERVED AT WORCESTER COLLEGE, OXFORD, AND AT CHATSWORTH.

By J. ALFRED GOTCH, F.S.A. [F.]

IT is evident that these collections are two portions of what was originally one collection, inasmuch as certain drawings in each supplement some of those in the other. Their history appears to be as follows: John Webb, who was a pupil and assistant of Inigo Jones, and who married a kinswoman of his, and was also his executor, bequeathed all his "library and books and all prints and cuts and drawings of architecture" to his son William, with strict injunctions that they should be kept together.* It is said that the widow of William, in spite of these injunctions, disposed of the drawings, which came into the possession of a "Mr. Oliver, the City Surveyor," who, according to John Aubrey (in his *Lives*), "hath all his papers and designs [i.e. those of Inigo Jones], not only of St. Paul's Cathedral, &c., and the Banqueting House, but his designs of all Whitehall, suitable to the Banqueting House; a rare thing, which see." It is almost certain that the drawings thus referred to were those which John Webb left by will to his son, and also those which are now at Worcester College and Chatsworth. It is beyond dispute that some years later a large part of the drawings were in the possession of Lord Burlington, and the remainder in that of Dr. Clarke of All Souls' College, Oxford; but how these respective owners acquired them is not known. Lord Burlington's collection descended to the Dukes of Devonshire; the late Duke made over the bulk of it to the Royal Institute of British Architects, but he retained those connected with the Palace at Whitehall. They are now at Chatsworth and are dealt with in the following catalogue [p. 355]. Dr. Clarke, who died in 1736, bequeathed his collection to the Library of Worcester College.† From the outset the drawings were attributed to Inigo Jones: Aubrey refers to them as his; both Campbell and Kent assume the same authorship, and everyone who has subsequently dealt with them has followed the same lead. But it only requires a careful study of those signed by Jones and by Webb respectively to enable the inquirer to distinguish with comparative ease between the draughtsmanship of the two men. The results of a prolonged scrutiny are given in the following catalogue, from which it will be seen that comparatively few can be safely assigned to Jones, by far the greater number being by Webb.

The numbering of the drawings at Worcester

College was done for the present purpose; those at Chatsworth were probably numbered from the outset.

The drawings at the Royal Institute formed the subject of a paper in the *JOURNAL* for the 18th March 1911. The drawings for the Palace at Whitehall are fully described in an article by the present writer published in the *Architectural Review* of June 1912.

WORCESTER COLLEGE DRAWINGS.

SERIES I. (MISCELLANEOUS).

1. Half plan of the Star Chamber, to a large scale.
Endorsed in Inigo Jones's handwriting "for the Modell of the Starr Chamber, 1617."
2. The other half of the same plan.

On June 22, 1617, Chamberlain writes to Sir Dudley Carleton: "She [the Queen] is building somewhat at Greenwich w^{ch} must be finished this Sommer. Yt is saide to be some curious devise of Inigo Jones, and will cost above 4000li but he hath another modell or platforme for a new starchamber w^{ch} the Kyng wold faine have don yf we could find monie." *State Papers, Dom.* James I., vol. xcii.

There is a council warrant, dated June 27, 1619, for payment to Inigo Jones of £37, for making two several models, the one for the Star Chamber, the other for the Banqueting House. (Quoted in *London Past and Present* by Wheatley and Cunningham, iii. 304.)

The drawings for the Banqueting House are at Chatsworth Nos. 52 and 53.

The Starre Chamber is a chamber at the one end of Westminster Hall. *Minshew*, ed. 1617. This place is called the Star Chamber, because the roof thereof is decked with the likeness of stars gilt. *Stow*, p. 175. (*London Past and Present*.)

3. Plan of the same building to a smaller scale (11 feet to the inch), showing the compartments of the ceiling.

Title in later hand "Star Chamber."

4. Elevation of the same building, to the same scale.
5. Section of the same building, to the same scale.
The principal room is 76 feet long, 55 feet wide and 55 feet high.

3, 4, and 5 are drawn by John Webb.

6. Elevation of a clock-turret, Whitehall, rising above an embattled parapet. Scale 5 feet to the inch. The plan is on the reverse.
Title in Inigo Jones's writing, "June 1, 1627, for the Clokehouse Whight hale."

7. "The Designe of y^e Chirurgians Theater 1636" (in Webb's writing).

Two plans and an Elevation.

The Barber-surgeons' Hall, with which the theatre was in connection, stood in Monkwell

* *Inigo Jones: a Life of the Architect*, by Peter Cunningham, 1848. Printed for the Shakespeare Society.

† *Dictionary of National Biography*, under Inigo Jones.

Street, City. Horace Walpole, in mentioning the theatre, says "Surgeons' Hall is one of his [Inigo Jones's] best works. It was pulled down in 1783.

"The theatre is commodiously fitted with four degrees of cedar seats, one above the other, in elliptical form, adorned with the figures of the seven Liberal Sciences, the twelve signs of the Zodiac, and a bust of King Charles I. The roof is an elliptical cupola." *Hatton*, p. 597. (*London Past and Present*, i. 102.)

8. "Ceiling of the Great Staire Wilton" (Inigo Jones's writing).

Plan and Sections; dimensions figured.

Wilton House in Wiltshire, the seat of the Earls of Pembroke. There is an elevation of one front of Wilton in the Devonshire-Burlington Collection, at the Royal Institute of British Architects.

9. "Ceiling of y^e Countes of Penbrooke bedchamber" (Inigo Jones's writing).

Plan and Section; dimensions figured.

The original designs in the panels have been covered with slips pasted over them, on which the finished designs are drawn. The original designs bore some likeness to that of the Cabinet room (No. 10).

10. "Ceiling of y^e Cabinett roome" (Inigo Jones's writing).

Plan and Section; dimensions figured.

11. "Ffor y^e Seeling in y^e Cabinett Roome Wilton. 1649" (John Webb's writing).

Plan and Section; dimensions figured.

Alternative sketches for particular features, with letters of reference. Profiles of some of the mouldings to a larger scale.

12. "Ceiling of y^e Countes of Carnarvons bedchamber" (Inigo Jones's writing).

Plan and Section; dimensions figured.

The Countess of Carnarvon was Anna Maria, eldest daughter of Philip, Earl of Pembroke.

13. "Ceiling of y^e Countes of Carnarvons withdrawing roome" (Inigo Jones's writing).

Plan and section; dimensions figured.

Note in pencil by John Webb "for y^e Co. Carnarvons withdrawing roome."

14. "Ceiling of y^e passage roome in to y^e garden" (Inigo Jones's writing).

Plan and section; dimensions figured.

15. Plan of a ceiling, unnamed.

The dimensions of the room are figured, 35 feet by 22 feet. Probably by Inigo Jones.

Pencil sketches on reverse.

16. Elevation of half a front, Somerset House.

Title, in John Webb's writing, "Upright of y^e Pallace at So. House 1638. not taken."

The general treatment of the elevation is somewhat similar to that of some of the Whitehall designs.

17. Plan and elevation of one front of Somerset House.

Titles, in John Webb's writing:

"Groundplatt of y^e Pallace at Somerset Hou. y^e Second Appartment: 1638," and

"Upright of y^e Pallace at So. Ho. y^e second designe 1638."

The façade measures 540 feet in length.

At the foot of the drawing is written in a later hand, "Inigo Jones."

There are more careful drawings of this plan and elevation at Chatsworth, Nos. 54, 55.

18. Details of doors and windows, etc., to a larger scale, with reference letters corresponding to letters on No. 17.

Notes in Webb's writing:

"This is y^e just height of y^e $\frac{1}{2}$ story as it answers with y^e rest of y^e front."

"These two windowes are one next y^e other in y^e designe and are just of y^e same distance as they are in y^e said designe."

"This is y^e just distance as it is in y^e designe though there bee a window with pillers in place of this window with Cartooses."

"This is y^e just distance as it is in y^e designe."

There are drawings connected with Somerset House in the Burlington-Devonshire Collection at the R.I.B.A., viz.:-

A window for the Queen's chapel, dated 1632.

A cistern, dated 1632.

A chimney-piece, dated 1636.

Somerset House (the old building) was begun by the Protector Somerset soon after the death of Henry VIII. (1547). On his attainder and death (January 1552) it became the property of the Crown. James I. granted it to his Queen, Anne of Denmark, and Charles I. to his Queen, Henrietta Maria. Inigo Jones built a chapel 1632-35. The above drawings, dated 1638, were not carried out. Inigo Jones died here in 1652.

In the John Thorpe collection, pp. 87, 88, at the Soane Museum, is a plan of the courtyard adjoining the Strand, and an elevation of the Strand front, both apparently surveys. Among the Smithson drawings (Coke Collection, No. 31) is a plan of the whole palace and gardens, from the Strand to the River. The date of this drawing is probably about 1619. One courtyard is called "the newe additions at Somersett house." Kyp's view (pub. 1709) agrees with Smithson's plan, save that a part of the garden front had by then been rebuilt. On Smithson's plan the house is called "the queenes house." The dimensions of the court adjoining the Strand do not tally on Thorpe's and Smithson's plans, yet a scale is drawn on each plan, and such dimensions as are figured agree with these scales.

The façades drawn by Webb scale respectively 293 feet for half the front on No. 16, giving a total length of 586 feet; and a total length of 540 feet for No. 17. These dimensions are far in excess of the whole width of the garden (adjoining the river) shown on Smithson's plan, which is only 408 feet. It is impossible to say how Webb's building was to have been fitted on to the old building. The garden front in Kyp's view has no relation to Webb's elevations.

19. Durham House: ground plan.

Title, in John Webb's writing, "Groundplatt Durham: Howse 2: designe."

The apartments are named; see list below.

20. Durham House: upper plan.

Title, in John Webb's writing, "Seconde ffloors Durham Howse. not taken 2: Designe." Endorsed in Webb's writing, "Second Designe Durham Howse not taken."

The apartments are named: see list below.

21. Durham House: elevation.

Title, in Webb's writing, "not taken Durham Howse."

This is the elevation, belonging to Nos. 19, 20, but there are two coupled columns at each end of the façade, which are not shown on the plans. There are flyers over the attic windows.

22. Durham House; another ground plan.

Title, in Webb's writing, "Ground Platt for Durham Howse 1649 (not) taken. [The "not" has been inserted.] The 3rd designe."

Endorsement, in Webb's writing, "Third designe for Durham Howse ~~not~~ not taken." There are also dimensions under the heading, "Measures of y^e front of y^e designe of Durham Howse according to y^e designe taken."

The apartments are named; see list below. The over-all dimensions of the plan are 332 feet by 173 feet.

23. Durham House: upper plan of No. 22.

Title, in Webb's writing, "Plant of y^e Second Story for Durham Howse (not) taken" [the "not" inserted].

The apartments are named: see list below. For the elevations of this design see No. 51.

The names of the rooms on the ground plan, No. 19.

Chaplaines cham.	housek
Study	housekeep. apartm ^t
Secretaries cham.	Housekeeps kitchen
Study	Lobby
Back stairs Lo. side	Paintry
Private Passage to y ^e garden form y ^e Lo. and La. syde	Weyho.
Library	Workhouse
Chapple	Bakehouse
Apothecarys Lodg.	Buttry
Wayters Roome	Passage to y ^e buttry & bakehouse
Stewards Roome	Beer Seller
Stewards Cha	Wyne Seller
Stewards Clerks roome	Pastry
Study	Boyling place
Private Passage to y ^e garden from y ^e gallery above	Great Kitchen
Antich.	Larder
Cham.	Privy Kitchen
Chamber	Larder
	backs. La. syd.
	Passage to y ^e back-stairs.

The names of the rooms on the upper floor, No. 20.

His Lo pps Cabinett	Withdr. chamber
His Lo pps Bedch.	Dressing roome
Private dyning roome to serve both his Lo pps and Ladyes appartim ^t	Bedch.
Her Ladiships Cabinett	Houseke s Dyning roome
Her Ladiships Bedch.	Lobby
Withdrawing roome to her Ladish. bedch.	Bedch (thrice)
Pallet roome	Antich.
Gallery	Study (twice)
Backstayre roome	Lobby
Backstayr	Bakers ch.
Page's roome	Butler chamber
Cabinett	Lobby
Camera [for Lo. Herbert, <i>erased</i>]	Chamb. (twice)
Rooms of State (twice)	Cabi (twice)
Camera (twice)	Passage Gallery or Great Chamber
Cabinett (twice)	Passage
Backstaire	Chamber (twice)
Antich. Lo. Herberts appartmt	Cabinett (twice)
	Lobby
	Pastry man
	Cooks roome.

The names of the rooms on the ground plan, No. 22.

The outward walls in y^e lower story are 4 fo: in y^e second 3 fo: $\frac{1}{2}$. The division walls below 2 fo: $\frac{1}{2}$ above 2 fo:

Secretary Cham.	Weyhouse
Cab.	Beere Seller
his study	Buttry
Survey ^r cham.	Ale Seller
Study	Passage from y ^e offices to y ^e Hall (twice)
Library	Wyne Seller
Chapl: ch.	Pastry
Study	Larder (twice)
Chapple	Privy kitchen
Bottlehouse	Great kitchen
Hall	Passage from y ^e wood-yard
Entrata	Larder
Wayters dyning roome	Woodyard
Paintry	Lo. backstayre
Stewards dyning roome	Stayr for y ^e serv ^{ts} roomes
Stewards study	y ^e gardiner
Stewards ch.	La. back stayre
Receiver generall ch.	Kitchen garden
Cab.	Garden towards y ^e Thames
his study	m ^e if ye grounde will yield it to gayne y ^e back of these chimneys beyond y ^e upright of y ^e building
Antich.	
Receiver of y ^e west his ch. or rather y ^e auditors	
Study	
Under housekeeper	
Werkhouse	
Bakehouse	
Passage to bring in Beere & meale	

The names of the rooms on the upper floor, No. 23.

Lo. Bedch:	Dressing Roome
Stooleroome	La backstayre roome
Cabinett	Stooleroome
Wayting roome	Wayting roome
Ladies Backstayre roome	Pall. for La. syde
Pallat roome Lo:	Pall for Lo. syde
Pallat roome La:	Lo. Bed.
Dressing Roome	Stoo. Roome
Privy cham.	Study
Lo: backstayre roome	La. backst
Lo backstayre	Women's roome
Lo. Wardrobe (twice)	La. Wardrobe
La. backstayre	Lo. backstayre room
Womens roome	Lo. backstayre
Ladies wardrobe	Lo. wardrobe
Presence upp to y ^e Roofe	Wardrobe
Great chamber upp to y ^e Roofe	Paintry man
This stayre rises no higher	Cheife Baker
Presence upp to y ^e Roofe	Butler
Privy Ch.	Upper house keeper
La. Ch.	Entrata
	Porters roome
	Mr of y ^e Horse
	Pastry man
	Cooks roome
	Kitchiners

Gallery in y^e mediane (?). This stayre as well up to y^e gallery as downe to y^e garden.

This stayre & y^e on y^e other syde wh answers to it rise on higher then this story.

This stayre to lead upp to y^e gallery above.

There had been a house, the residence of the Bishops of Durham, on this site since the thirteenth century. After some vicissitudes, the then existing house was given by Cuthbert Tunstal, Bishop of Durham, to Queen Elizabeth, who retained it

during her life, and allowed Sir Walter Raleigh to live there. After her death Raleigh, who had been in occupation about twenty years, was deprived of it, and it was restored to the see of Durham. In the year 1640 Lord Keeper Coventry died in the best portion of the house, and what remained of it was subsequently obtained by Philip, Earl of Pembroke, for whom Webb made these designs, which were never carried out. The remains of the old house were swept away early in the reign of George III., and the brothers Adam built the Adelphi on the site. (See *London Past and Present*, i. 542.)

From the fact that "not" has been inserted before "taken" in the titles of the third design, it would appear that the carrying out of that scheme was, for a time at any rate, seriously contemplated.

24. College of Physicians: Panelling.

Endorsement in Webb's writing "Wainscott & moulds for ye Consultation roomes at Phisitions Colledge 1651": "not taken" (added in lighter ink). Title in Webb's writing "Wainscott for y^e Consultation roomes at Phisitions Colledge." There are no moulds given. The drawing shows three sides of a panell'd room. It is signed "Jo. Webb" in two places.

Compare this panelling with that in the Dining room at Thorpe Hall, near Peterborough, also ascribed to Webb.

25. College of Physicians: Library.

Endorsement in Webb's writing, "The Library Phisitions Colledge 1651, not taken."

Title in Webb's writing, "The Plant of the Library Phisitions Colledge 1651."

Plan and elevation of one end. Signed "Jo Webb."

26. College of Physicians, Library.

Elevations of two long sides. Signed "Jo Webb."

These designs must have been made for the building at Amen Corner, which was the headquarters of the Royal College of Physicians from 1560 until the Great Fire of 1666, after which (in 1674) the College was removed to Warwick Lane. (See *London Past and Present*, iii. 82.)

27. Plan and detail plan and an elevation of one side of (apparently) a small theatre. Drawn by Webb.

On a tablet over the door is inscribed "Prodesse et Delectare." There are busts of Thespis and Epicurus, pedestals for Melpomene and Thalia, and niches for Alexander, Sophocles, Aristotle, and one other (undeciphered).

28. Plan and elevation of a Grotto.

Notes in Webb's writing. "Grottas. This Invention may serve for a grotta with some rustick Loggia before it and being vaulted a botle ye solidenesse in ye middle may [sic] be made to sustayne ye said botle & it is adorned with neeches answerable to those in ye sydes of ye wall: within ye Peece may bee voyd & a stayre made to ascend upp into a Tarras over ye grotta."

On the plan is "Serly lib 3 fo. 69: a." Webb's plan is a revised version of that in Serlio's *Architettura et Prospettiva*, Venice, 1619.

Note against the elevation "Many tymes there may bee a place for a building without any opening as in a Court or in a garden or y^e like with [sic] for adorning whereof such an Invention as this may bee made use off in wch may bee placed statues

& other antiquities as ye occasion serves. Serly lib: 4: fo: 137."

The elevation is adapted from the illustration referred to in Serlio.

29. Rough sketch of a Fountain, in pencil.

Title in Inigo Jones's writing "fontane di Giovanni maggi (?) Romano Roma 1618."

A more careful ink rendering of the same.

30. Another rendering of the same idea as No. 29.

31. "For a fountaine in a wall at Greenwich 1637." Webb's writing; scale drawn.

32. Perspective sketch for a fountain of two stories. Probably by Webb.

33. Plan, section, and elevation of a large Mausoleum (?) The figured dimensions "100 fo." etc. are apparently in Webb's writing.

34. Plan and section of an oblong room (46 feet 3 inches by 27 feet 9 inches), with an outside portico of six columns, 22 feet distant.

35. Plan and alternative section of the same room.

The corners of the room differ from those on No. 34.

36. Plan and section of a somewhat similar room, but 43 feet 6 inches square. It has an outside portico with columns, 22 feet away.

37. Plan and section of a long room (111 feet by 64 feet 9 inches), with detached columns round it.

This evidently inspired the design for the Assembly Rooms at York, attributed to Lord Burlington.

38. Plan, elevation, and section of a cruciform church with equal arms and with a dome over the crossing.

The final on the dome resembles those on the towers of Whitehall Palace, series iii.

39. Plan of a large circular church with four square projections on the axial lines.

On the reverse are numerous "measures without" and "measures within," in Webb's writing. Internal diameter of church 316 feet. Width, out to out, 530 feet.

40. Elevation of No. 39.

41. Section of same.

42. Plan, two elevations and two sections of a church with a portico of columns.

The drawing is marked in pencil in a modern hand "Inigo Jones," but the draughtsmanship is Webb's.

43. Plan of a large cruciform church with circular east end.

Half the plan shows a building of single span without aisles: the other half shows a similar building but with aisles outside it. The length of the larger design is 610 feet within. The width of the Nave is figured "55 ft. and $\frac{1}{2}$ of an inch." The aisles are half this width, viz., 27 feet 6 $\frac{1}{2}$ inches, as also are the walls between the main building and the various aisles.

44. Sections and elevations of No. 43.

One section (on left of the paper) is half the section through the dome and one transept, and half the west elevation. Another is the section through the chancel and its aisles, looking east. The third is half the section through the transept, and half an end elevation of the transept.

45. Part elevation and part section of a domed church, apparently an alternative of No. 44.

Another section of a church, in pencil.

46. Part plan, elevation, and section of a domed church.
Nos. 38-46 appear to be of Webb's drawing.
Are 43-46 sketches for rebuilding St. Paul's Cathedral?
47. Unfinished plan of a church, with unfinished part elevation on the reverse.
Dimensions etc. are in Webb's writing.
48. Section through the court of a large house, showing the façade of the court.
There are voluminous notes as to dimensions and proportions in Webb's writing on the reverse.
49. Another section through the court of a large house.
50. Central portion of No. 49 to a larger scale.
49 and 50 are of Webb's drawing.
51. External elevation, and section through the court of a large house.
This is Durham House: see the plans Nos. 22, 23.
52. Plan, elevation, and section (to a small scale) of a large house with an arcaded central court.
53. Plan and elevation of a small house, with loggia on upper floor: resembles some of the designs in Kent's *Designs of Inigo Jones*.
Two sketch plans in pencil.
The writing is Webb's.
54. Elevation of a house, with central block, outlying wings and connecting arcades.
55. Elevation of small house; frontage 55 feet.
Title in Inigo Jones's writing "Upright for my lo Matravers his house at Coatsbury 1638."
56. Ground and upper plans of a small house, after the style of Kent's *Designs of Inigo Jones*.
The rooms are named in Webb's writing: on the ground floor—Hall, Kitchen, pastry, larder, pantry, wynter Parlor, summer Parlor, chamb. On the upper floor—Dyning Roome, withdrawing roome, Padrons chamb. study, chamb. (thrice).
There is an elevation in the Burlington-Devonshire Collection at the R.I.B.A. which almost agrees with these plans.
57. Elevation of a small house, with columned portico; frontage 54 feet.
May be by Inigo Jones.
58. Plan and elevation of a one-story house, with a heavy attic without windows.
There is a staircase, however.
59. Part plan and elevations of a large building with a courtyard, and a two-story open arcade on the outside.
Resembles the Libreria Vecchia at Venice.
60. Alternative elevation for No. 59.
61. Elevation of a large house.
Closely resembles pl. 49, 50, vol. ii. in Kent's *Designs of Inigo Jones*.
Probably by Webb.
62. Small studies for houses (some plans, more elevations).
One is noted "Serlio lib. 4: fo: 166:" but the reference does not apply. Another is "office of y^e worke at Newmarkett."
The writing is Webb's.
63. Small studies for plans of houses; also two on reverse.
Compare similar sheet of studies in the R.I.B.A. collection. Webb.
64. Small studies for houses; sections and elevations.
One elevation may be for one of the plans on No. 63. Another (with two towers) resembles the central portion of an elevation of Whitehall Palace at Chatsworth (63). Webb.
65. Small studies for plans of two large houses, with outer courtyards.
Also plan of a small vestibule. Webb.
66. Studies for doorways.
Three are named Dorick, Ionick, Corinthian.
Two others are to a larger scale in the R.I.B.A. Collection.
Another is the drawing to scale of a doorway and wall of which a figured sketch is in Folio 13 (No. 3) of Palladio's *Original Designs* in the R.I.B.A. Collection.
67. Studies for arcades.
68. Studies for archways.
One is entitled, in Webb's writing, "Arch in Verona. This is measured by y^e ancient foote." Also detail of a cornice and pedestal.
69. Two Classic archways.
Notes and dimensions in Webb's writing.
Are these adaptations from Serlio?
70. Three slight studies; one of an arcade, two of doorways.
Webb's dimensions.
71. Studies of windows, a door, and part of a one-story façade.
Against one window is a reference to "Serly lib 3 fo: 89: b: & 90: a," but it does not apply to the 1619 edition. Webb's writing.
- 72 and reverse. Sheet of studies, entitled in Webb's writing "private Chappells for galleries or otherwise."
Mostly from Serlio: the references apply more or less to the 1619 edition, but some of the plans may be studies founded on Serlio. The reference, on the reverse, to Li 4 fo: 147 should be 149.
On one of the plans is the note "Serlio Lib: 3: fo: 65 b. This church hath foure entrances & y^e Communion Table stands in y^e middle, at y^e foure corners there may bee vestryes & over them y^e belfryes especially in front & over y^e loggias may bee galleries."
- 73 and reverse. Sheet of studies, entitled "Wyndowes &c."
There are notes in Webb's writing on both sides of the paper. The references are mostly to Serlio: there is one to "Pall fo: 82:" There are two references to "Newmarkett," one to "Sr P. Kelligrew's howse Blackfryers" and one to "St. James's." In the references to Serlio the folio is sometimes misquoted.
Notes in Webb's writing:
Vide dores—for a front where wyndowes are made with pillars or pilast—it must bee observed y^e the bases and Capitalls of them must bee of another Invention & of lesse ornam^t then y^e bases & Capitalls of y^e principall Columnes of y^e front yett neverthelesse y^e same order must bee always observed Ser lib 3 fo: 112.
The middle space of this wyndow is twice as much as y^e syde spaces: y^e Col a is but $\frac{1}{2}$ a diameter: therefore these manner of wyndowes should have y^e syde spaces not lesse then $\frac{1}{2}$ y^e middle space nor more thent. And these manner of wyndowes may bee used where y^e buildings

stand in narrow & straight places so y^e y^e roomes may have y^e greater light.

73 reverse.

Wyndowes of y^e stayrcase at S^r P. Kelligrews house.

Blackfryers Mr Jones' (?) designe.

Wyndowes of y^e first story above.

How y^e moulding wch continues under y^e eaves of y^e Roofe advances y^e head of y^e wyndowe. A. moulding under y^e Roof. Newmarket Brewhouse.

At Newmarket the principall Cornice of y^e front is on y^e syde backwards converted into 2 fascias & these fascias break as in this schitzo to give way to y^e lights of y^e halfe story.

74. Four small studies of "wyndowes."

References, "P: P: R fig: 6. P: P: R fig: 11."

75. Studies for "Exchanges or Merchants Piazzas."

Voluminous notes in Webb's writing (see below).

The plan at the top of the paper is adapted (without reference) from Serlio Lib. 3, fo. 75.

Notes in Webb's writing:—

This designe may bee used when there is a free situation so y^e y^e Porches may bee made round about.

This designe may serve for a Royall Exchange from a metropolis as London & y^e like where y^e Piazza A shall serve for y^e Merchants & y^e wall of wh Piazza in y^e lower order may be adorned with neeches for statues: y^e Porticos on y^e outsyde may form with foure streetes & round about them may bee shoppes for tradesmen. At each corner there is an oval stayre for y^e agrees best with y^e Invention wch band in to y^e second wch likewise hath open porticos round about & shoppes on each syde both towards y^e Piazza & streetes so y^e in both storyes there wilbe 176 shoppes or thereabouts the rent wherof wilbe sufficient to defray the charge of such a worke.

The stayres may end above y^e worke with some noble turrett with a cupola over it.

A Merchant's Piazza. B first story. C second story. D places to pisse in for in places of concourse such commodities are necessary. [Then follow dimensions.]

If ye portico bee made but uppon two sydes because y^e ends of y^e Exchange joyne to other buildings then instead of y^e portico at each end there may bee several shoppes in add as in this schitzo.

If ye shoppes bee made double then at every 3 shoppes there would bee an entrance out of ye Portico y^e y^e shoppes of y^e middle may have sufficient light.

If ye worke fronts but uppon one Streete then y^e Invention may bee according to this designe but there must bee wyndowes made in y^e half circle of y^e shoppes behind to give light to y^e under passage.

76. Three sections of buildings.

Probably through the saloon of a house.

77. The front of a one-story columned building.

Probably a church.

78. Two sections, showing features of a garden.

79. A large plan only partly inked in.

80. A number of drawings of the Orders etc., with letter press.

81. A number of drawings of Grecian and other houses, doorways etc.

Nos. 80, 81 were apparently intended for publication.

WORCESTER COLLEGE DRAWINGS.

SERIES II. (loose flat drawings in tray).

WHITEHALL PALACE DRAWINGS.

1. Ground plan.

Scale, 60ft. to the inch.

2. Upper plan.

To same scale.

3. Second floor plan.

To same scale.

The overall dimensions are 1160 feet by 860 feet.

The square court was to be on the east, or river front; the circular court on the west, or park front. The Banqueting House is towards the south end of the east side of the large court.

There are plans of the ground and upper floors of this design at Chatsworth Nos. 86, 87. They are drawn to a larger scale (30 feet to the inch) and show a larger building, 1280 feet by 956 feet. They have precisely the same disposition as these at Worcester College, except in respect of the circular lobbies on either side of the square court.

Kent reproduced the Worcester College plans in his *Designs of Inigo Jones*, vol. i., but he followed the Chatsworth plans in the particular in which the two sets differ. He also reversed the plans in the process of engraving them, so that south became north and vice versa.

4. Elevations of the east and west fronts.

The upper drawing is the west elevation; the lower the east.

There is a small preliminary sketch (by Webb) of half of one of these elevations at Chatsworth (No. 80, reverse).

There is a detail of the ground story of one of the corner pavilions at Chatsworth, No. 82.

The elevation of the south (or north) front is in Series iii. 1.

5. Section through western courts, looking east.

Section through eastern courts, looking west.

These Sections show the Banqueting House and its corresponding blocks.

6. Section through the large court, looking either east or west.

The main longitudinal section is in Series iii. 1.

Kent published the scheme represented by the drawings 1-6 in his *Designs of Inigo Jones*, vol. i.

7. Two elevations for other schemes for the Palace.

The upper elevation agrees with the plan of a scheme at Chatsworth, No. 73.

There is a note in Webb's writing, "To cast these spaces ÷ into arches and make a portico below towards y^e garden." This alteration was developed on a drawing at Chatsworth, No. 80.

The lower elevation agrees with the plan for another scheme at Chatsworth, Nos. 68, 69.

There is a note in Webb's writing "To make this front of three continued storyes."

8. Modern copy of ground plan.

9. Modern copy of upper plan.

10. Mounted tracing of ground plan.

11. Mounted tracing of upper plan.

12. Ground plan of another design, signed "John Webb Archit."

The over-all dimensions are 1100 feet by 800 feet. The latter dimension is written in pencil against the Banqueting House (east) front.

There is an elevation of one of the shorter fronts (the east) at Chatsworth, No. 66.

There is also a plan similar to this at Chatsworth, No. 85. It retains the same general disposition, but is varied in detail, and is somewhat larger.

WORCESTER COLLEGE DRAWINGS.

SERIES III. (on rollers).

WHITEHALL PALACE DRAWINGS (except three at end).

1. Elevation of one of the long fronts (south or north).

There are arcades shown on the ground story at each end of the front; on the ground plan there is an arcade only at one end.

Longitudinal section, showing the internal courts.

The turrets at the ends of the fronts have been added on small applied pieces of paper.

These drawings are part of Series ii. 1-8 and are drawn to the same scale as ii. 4-8.

2. Section (to a larger scale) through the central court. Similar to ii. 6, but more neatly drawn and more developed.

3. Section, same as iii. 2, but showing variations in the design.

There is a detail of part of the central block at Chatsworth, No. 83.

4. Elevation of one of the short fronts of another design. This is practically the same as the upper elevation on ii. 4.

5. Elevation of the other short front of the same design as No. iii. 4.

6. Elevation of one of the long sides (the south) of the same design.

7. Longitudinal section (looking north) of the same design.

8. Transverse section through the eastern courts (looking east) of the same design.

These sections, which show the courts, imply a plan differing largely from those in series ii. 1, 2, 3.

9. Elevation of same front as No. iii. 4, but varied in design.

10. Elevation, a variant of the last.

11. Elevation, another variant.

12. Elevation, a variant of No. iii. 6.

Nos. 10, 11, 12 are cut out and mounted on vellum.

13. Longitudinal section, a variant of No. iii. 8.

14. Elevation, a variant of Nos. 4 and 9 of this series. It appears to be by a more modern hand.

15. Two drawings on one roller.

One is endorsed in Webb's writing "The great Court opposite to y^e Banqueting House," but it

does not connect itself with any of the drawings either at Worcester College or Chatsworth.

The half façade scales 333 feet.

The other is entitled "Puryle of y^e Duke's Pallace at Cobham, 1648."

This design was not carried out. The later side of the court at Cobham Hall does not resemble this drawing.

16. Elevation of part of the back of the Pitti Palace, Florence.

"Scala di Braccia Fiorentina."

17. Elevation of the Pitti Palace at Florence.

"Scala di Braccia Fiorentina."

THE CHATSWORTH DRAWINGS FOR WHITEHALL PALACE.

The drawings are bound in a volume entitled

ORIGINAL DESIGNS FOR WHITEHALL BY INIGO JONES.

The drawings are numbered, beginning at 48.

48. Block plan and part elevation of a scheme for Whitehall Palace.

The plan is sketched by hand, and shows a disposition different from any of the other designs. It lies practically north and south, the north being at the top of the paper. The north front faces a large open space, or square, which extends as far as a cross thoroughfare, named as to the east part "The Strande," and as to the west, "way to St James's." North of the thoroughfare is the "Mews," occupying what is now Trafalgar Square. To the east of the palace are the "Gardens," to the south, the "Privy Garden," to the west the "Parke." The Banqueting House is in the centre of the east side of the south-east court.

There are various dimensions set out, which give the over-all size as 832 feet by 634 feet 6 inches.

The drawing is dated "Oct. 17, 1661." The figures and writing are Webb's. He must therefore have been working on this design after the Restoration of Charles II.

49. A ground plan of another design for the palace.

This comprises three courts; the two smaller are to the west (conf. block plan No. 56). The Banqueting House is on the east side of the south small court, the corresponding block in the north court being the chapel.

Notes in Webb's writing:

"Under the Kings Guardchamber to make his Mat's privy Kitchin. So under the Queens."

"In the half story over the Guardchamb. & presence an Appartm^t for y^e Kings Lo. Chamb. so over these roomes on y^e Q's side."

"To make a corridore about the hall."

"Over this roome an Armory."

"Over this Gallery a Library."

The east front was originally intended to be a series of rooms, but they have been erased, only the names remaining.

The over-all dimensions appear to be 696 feet by 564 feet.

For other drawings connected with this scheme see Nos. 56 (block plan), 57 (copy of ground plan), 58 to 65 (alternative elevations).

50. Two plans of the Banqueting House (scale 11 feet to the inch).

Titles in Webb's writing:

To lower plan, "Ground platt of y^e Banqueting Howse first floore."

To upper plan, "Second floor with y^e manner of y^e Seeling of y^e Banqueting House."

51. Four drawings of the timber construction of the roof of the Banqueting House.
Titles in Webb's writing:
"The Trusse of y^e hipp at y^e Banquetting howse."
"Trusse of y^e Roofe at y^e Banquetting."
"The backside of y^e puncheon."
"Syde of y^e Roofe Banquetting howse."
"Groundworke of y^e Roofe at y^e Banquetting howse."
52. Plan and elevation of the Banqueting House.
Apparently a preliminary sketch by Inigo Jones.
There is a low annex at each end. Compare No. 53.
53. Elevation of the Banqueting House, by Inigo Jones.
In the main this tallies with the building as executed: the central pediment was omitted, and a balustrade was adopted after the manner indicated in pencil. The swags under the top cornice are added in red chalk. They were adopted in execution. The pilasters at the corners of the front are actually two separate pilasters, not coupled as here shown.
54. Plan of a proposed addition to Somerset House.
55. Elevation of No. 54.
Nos. 54, 55 are more careful versions of the design shown on the drawing at Worcester College, Oxford, i. 17.
56. Block plan of No. 49, showing outline of the existing buildings.
Compare with John Fisher's plan of Whitehall Palace, 1680, published by G. Vertue.
57. Ground plan, a careful copy of No. 49.
- 58-65. A series of alternative elevations of the west façade of the large court, No. 49.
These elevations vary in length and in detail, but the general disposition is the same throughout. No. 65 agrees more closely than the others with the plan, but the drawing combines the façade of the court with the corner pavilions of the east front.
66. Elevation of east front of the plan at Worcester College, ii. 12, signed "John Webb Archit."
Notes in Webb's writing:
"M^r I designd these uprights for the King at $\frac{1}{2}$ of an inch to tenn feete."
"Upright of the Pallace of Whitehall for King Charles y^e first taken but y^e front is to be encrease according to y^e groundplatt John Webb."
This "encrease" refers, no doubt, to the plan No. 85 (post).
This elevation resembles the series 58-65.
67. Part section and part façade of another design.
The beginning of the Banqueting House is shown on the extreme right. The section is taken through the Presence Chamber, as throne and canopy are indicated.
The style of the architecture differs from that of any of the other drawings, and this drawing agrees with none of the plans. It may be by Inigo Jones (but ?)
68. Rough ground plan of another design, partly inked in. The notes and dimensions are in Webb's writing.
The plan is symmetrical and consists of a square central court with three courts above and below and two to the right and left. The principal staircase is in the middle of the lower side of the central court. To the right of the main plan is the setting out, to a larger scale, of the left half of the façade at the top of the plan. This part plan is carefully figured and on it is the following note. "This court is 232 fo: 2 $\frac{1}{4}$ weh comprehends y^e 15 spaces & 3 fo: 1 $\frac{1}{2}$ advance at one end y^e body is 202 fo. 2 $\frac{1}{4}$ weh comprehends 13 spaces & 3 fo: 1 $\frac{1}{2}$ advance on each ayde" [y=yinch].
The over-all dimensions work out at 926 feet 6 inches by 863 feet 6 inches.
There is no room which can be identified as the Banqueting House.
- 68 reverse. Part section of a two-story building, with the commencement of another adjoining, arranged with seats in tiers.
On the latter is the note "upright for H of C."
69. Elevations, with explanatory plans, of the central block and a corner pavilion of plan No. 68.
(Compare the plans with the enlarged part plan on 68.)
The draughtsmanship is Webb's, as are also the notes and figures.
The whole elevation of the façade, embodying these portions, is given on the Worcester College drawing ii. 7 (lower elevation).
There are also sketch-details of the cornices and keystones, with reference letters to indicate their positions.
The note under the corner pavilion "65 fo: 2^o so y^e the outsyde of y^e thickestesse of y^e walls at y^e Angles falls out perpendicular to y^e diameter of y^e pillars."
70. Studies for the "Principall Stayres, taken" on plan 68.
Drawing and writing by Webb.
Also part of an arcade, with a mutilated note in Webb's writing.
71. Preliminary sketch plan and elevations, to a small scale, for the same design as No. 68.
A "councell chamber" is shown, but no Banqueting House.
Drawing and writing are Webb's.
The elevations have reference letters answering to others on the plan.
- 71 reverse. Part plan (apparently of another scheme) mutilated for use on other side of paper.
72. Plan, section and (?) elevation of "y^e Chappell."
Drawing and writing by Webb.
This appears to apply to plan No. 49.
There is a reference to "Pall lib 1 fo 15."
73. Ground plan of another design partly inked in.
This appears to be a development of the plan No. 68. It shows a circular court. There is no room which can be identified as the Banqueting House.
There is a note in Webb's writing against the right hand front. "Entrata peece for y^e use of y^e officers."
The over-all dimensions work out as 1,050 feet by 928 feet, the shorter side being of practically the same length as the longer side of No. 68.
The upper elevation on the drawing at Worcester College ii. 7 agrees with the shorter side of this plan.
74. Two plans of portions of No. 73, to a larger scale.
The plans (which are not in right relationship) are of the large central court, with variations, and of the middle court on upper part of the plan (opposite to the round court).
75. Plan and section of the chapel or hall on No. 73, in the middle of the upper side of the central court.
Webb's drawing and figures.

76. Plan and sections of the vestibule to the round court; at bottom of plan No. 73.
Also sketches for arcades with caryatids: one is named "the lower order of y^e round Court."
There are dimensions giving the "length & breadth of y^e court Caryatide."
Sketch for a cornice.
The drawing, writing and figures are Webb's.
76. reverse. Two alternative plans for a round court.
Dimensions and writing by Webb.
77. Plan and sections of the hall between the round and central courts on No. 73.
Sections of the vestibule on No. 76.
Sketch plan of the chapel. All by Webb.
77. reverse. Plan and elevation of a house.
Similar to the series in Kent's *Designs of Inigo Jones*, vol. ii.
Dimensions in Webb's writing.
78. Plans and elevation of the loggias on either side of the round court on No. 73.
Alternative elevation.
Notes in Webb's writing: "loggia di sopra appresso corte rotunda"; "questa loggia è in Solaro"; "Front of y^e quadrangular Court; This Invention to serve for y^e lower story all with round frontispieces"; "Loggia below next to y^e round Court."
79. Two elevations. The lower apparently of a corner pavilion on No. 73. The upper for the loggia towards the right hand end of the front at the top of plan No. 73. By Webb.
79. reverse. Partly finished elevation, similar to the lower elevation on No. 80.
80. Plan and elevation of the central portion of front at top of No. 73. Plan on No. 74 is an intermediate link.
Elevation, carrying out the note on the upper elevation, Worcester College, ii. 7. Adjoining this is a note in Webb's writing "taken for y^e front to y^e garden. y^e pillars & ornaments being proportioned as in y^e other paper. this alteration is made because y^e space for y^e neeches in y^e designe seemes to wyde and y^e spaces for y^e wyndowes & middle Intend too narrow."
80. reverse. Plan of a triangular house, with circular court: sketch elevations of particular features.
Small sketch elevation of half the west front of Whitehall Palace, elaborated on the drawing at Worc. Coll. ii. 4.
Notes and dimensions in Webb's writing.
81. Sketches for various friezes.
The allocation of each is indicated: as there are references to "y^e round court," they were probably connected with the plan No. 73.
The drawing and writing are Webb's.
82. Detail of doorway and window.
Apparently the detail of part of corner pavilion on Worc. Coll. ii. 4.
Webb's writing on back.
83. Detail of doorway and windows.
This is part of the central block on the section Worc. Coll. iii. 3.
There are notes on the reverse in Webb's writing, with the title "Faciata in greate, front of y^e insyde of y^e first court."
84. Two sketch elevations for parts of the courts on No. 73.
The upper sketch is entitled in Webb's writing "for y^e K & Q Courts."
The lower is part of a rectangular court. Compare No. 7, where caryatids are shown; the dimension of the arches from centre to centre is 19 feet 9 inches in each case.
Drawings and writing by Webb.
85. Plan of the Palace.
This is the alternative plan referred to on the elevation No. 66. It is of the same general disposition as the plan Worc. Coll. ii. 12, but somewhat larger, and the detail is different.
There is a title in Webb's writing "Ground Plant of the Pallace of Whitehall for King Charles y^e first, taken, John Webb Archit."
The Banqueting House is on the left part of the bottom front, and is figured 110 feet by 55 feet.
The over-all dimensions are, by scale, 1,110 feet by 900 feet.
86. Ground plan of the Palace.
87. Upper plan of the same.
These two plans agree with those at Worcester College, ii. 1, 2, except in regard to the central lobby on each side of the square court. They are drawn to a larger scale, and the over-all dimensions are larger, being figured on No. 87 as 1,280 feet by 956 feet.
- 88 (not numbered). Plan of a long narrow house.
89. Elevation of the last.
There are also four plans and elevations of the Louvre, entitled "Plan du Chasteau du Louvre Du Dessing du Cavalier Bernini."



REVIEWS.

JACOBEOAN ARCHITECTURE AND
INIGO JONES.

Jacobean Architecture and the Work of Inigo Jones in the Earlier Style. Illustrated with 14 plates and 4 appendices. By Arthur T. Bolton [F.S.A.]. Price 1s. net. [Published at 28 Victoria Street, S.W.]

A careful perusal and re-perusal leave us in considerable doubt as to the real intention of the author of this essay. Not an analytical study of Jacobean architecture apparently, since he offers no explanation of its genesis, its phases, or distinctive features. Not analysis or exemplification of the known work of Inigo Jones, from which comparisons might be drawn with the many things uncertainly attributed to that Master, since no such attempt is made. Still less any definite application of his most interesting, careful, and useful chronological Appendix to the foregoing essay, which is full of value. He arrives at, and states, it is true, certain conclusions, and ends with "The conclusion of the whole matter is that we inherit from this half-century some antique and lovely English homes, and derive therefrom a pleasure that is certainly no mere outcome of sentimental associations. Places like Fountains Hall, Abbots' Hospital, Kirby Quadrangle, St. John's, Warwick, Meyn's Park, and the Garden Front of St. John's, Oxford, produce an impression that no prejudice can efface."

As a statement of a happy fact, no one is likely to quarrel with this, except mildly perhaps with the apparent irony of the qualification as "homes" of one or two names in the list. But if this absolutely innocuous, and, as far as we are concerned, indisputable view is really the conclusion of the whole matter, what a deuce of a journey we have had to arrive at it. And have all the knowledge, enthusiasm, and research of the author been employed to bring us only there? He does not do himself full justice, and that is a pity. With his obvious ability, his fine materials, and carefully selected and ample array of tools, plus a little more arrangement and logical consequence, a really valuable contribution to a subject of very high interest, and of serious importance to students, might have taken the place of the interesting and readable but somewhat confused and confusing treatise before us.

In relation to Inigo Jones, Mr. Bolton's chief pre-occupation appears to be the confirmation of some of the many prevalent and rather vague attributions of authorship to that great artist, and the discovery of more or less plausible new ones. In this task he exhibits considerable skill, industry, and patient ingenuity, but he is, to our thinking, too easily convinced to be convincing.

With regard to the well known and beautiful Garden Front of St. John's College, Oxford, and the contingent quadrangle to the westward of this, which he illustrates by photographs and measured

drawings, and to which a loose attribution to Inigo Jones has long attached, in spite of the obvious lack of resemblance in manner to any of his known work, he "finds no real grounds to doubt Inigo Jones's authorship."

After a little excursus into Dr. Heylyn's "Cyprianus Anglicus," whence he produces no real evidence whatsoever, and a confirmatory side glance at the certainly interesting suggestion, but by no means positive evidence, afforded by the sculptor Le Sueur's employment upon royal statues for Winchester, where Jones was employed, as well as at St. John's, Oxford, he accepts the case as proven, and says "eleven years later (than the Whitehall designs) he gives us this lovely creation, &c.," and almost immediately goes on to say, "There seems no reason to refuse the authorship of the Porch of St. Mary the Virgin to him as well." There is at least the reason of entire lack of evidence and lack of resemblance to Jones's known work. And we should consider such an attribution to be most unjust to his reputation. If that master's authorship could be proved in the case of even the Italianate portions of the Second Quadrangle at St. John's, whose details suggest alliance to the more refined types of Flemish contemporary, or immediately precedent, work—a proof that would be of enormous interest, but is yet to make—it would be difficult to accredit the same author with work so different in type and feeling, so much clumsier in design and coarser in detail, and erected several years later. A likelier attribution for the porch, we should say, would be to Nicholas Stone.

Mr. Bolton puts a high estimate upon the architectural value of this work. "Purists may say what they like," he writes, "the fact stares us in the face that this little work is a gem of its kind. One of those things that only a master can achieve with success." This is mere assertion without any shadow of proof. In the "forties," "fifties," and "sixties" of the Gothic revival the "fact" stared architectural enthusiasts in the face that this, as we think, delightfully picturesque and effective little porch was a piece of dreadful barbarism, fit to be replaced by something in truer taste, like the equally barbaric, and almost equally delightful "Roman" gateway at Magdalen, also unauthenticly attributed to Inigo Jones, replaced by Pugin's gate, and itself destined to be removed in the early "eighties," in spite of Mr. G. F. Bodley's protests.

We hope Mr. Bolton may find time some day to rearrange, rewrite, and extend this treatise, and to include in his examples and illustrations some of the fine restrained and simple instances, the manor and farm houses, that abound especially in the southern and western counties of England, and whose beauty of proportion and homely dignity easily condone the innocent little architectural barbarities that sometimes qualify their sparse adornments.

We are in full agreement with him when he says that too much attention has been directed to such ill-regulated ornamentation. We think it is because the comicality, the "quaintness," that always appeals so obviously to the amateur in any naive crude workmanship, whether Norman, Fijian, or Jacobean, has been so much insisted upon, admired and haggled for, photographed and published in popular magazines, that the style has got a bad name, as being mainly associated with the stock-in-trade of pot-bellied caryatids, bulging divinities, angels and heroes, bestial and gruesome monsters, bulls and boars, hogs and dogs, sprawling arabesques, and crude arcading, and all the tiresome iteration of unnecessary humps and bosses that beset the worst examples of its decorative efforts.

These things mar the style and mark a low ebb of sculptural taste; granted, but they do not compose the style, they are its mere exuberances. And there is much of Jacobean ornament that is delightful in its vigour and naturalness, in effective outline, in happy play of light and shade. There is rare beauty in the simpler plasterwork, in the more restrained wood carving, the quiet flutings, and pretty little frets and patterns.

Go, if you are sceptical on this head, to Knole, to Merton Library, and Magdalen Dining Hall at Oxford, or to the Combination Room and Library at St. John's, or the Master's Lodge at Queens', Cambridge.

EDWARD WARREN, F.S.A. [F.].

THE ERECHTHEUM AND THE PROPYLÆA.

Problems in Periclean Buildings. By G. W. Elderkin, Ph.D., Princeton University. (Princeton Monographs in Art and Archaeology, II.) Lond. 1912. Price 7s. 6d. [Henry Frowde, Oxford University Press.]

There are four problems considered in this Princeton University monograph of sixty pages. Three are concerned with the Erechtheum, one with the Propylæa. A consideration of the unsymmetrical arrangement of the windows in the Pinacotheca of the latter leads the writer to trace the course of the original zig-zag road up to the Acropolis, and his suggestion seems further supported by the orientation of Agrippa's monument. This Paper emphasises the fact that what the Greek sought was not so much an abstract symmetry as an apparent rightness of arrangement from definite and important points of view. And all the time he was hampered by the vested interests of priest and cult. This, indeed, is the dominant note throughout the monograph. We are perhaps inclined in our schools of architecture to think of the Greek rising half-inhumanly to a kind of chilly perfection. It is a corrective of this view, and will make Greek work much more vital for us, to realise how the Erechtheum design (on Prof. Dörpfeld's theory,

which is supported in this monograph) was truncated and left a patchwork in deference to religious opposition, or how Pericles' great Acropolis entrance was spoilt by the building, as a political move, of the little Nike temple. Professor Elderkin deals at some length with the plan of the Erechtheum as built and as originally projected, and illustrates many points vividly with photographs of constructive detail. In dealing with so complicated a matter as this, however, more views of the building as now standing would have been helpful, and the points of the compass are noticeably lacking on the plans. In explaining the 'Maidens' of the Caryatid Porch, the writer supports his theory that they are a conventionalised representation of the Ἀρρηφύου (the four little girls who carried the mysterious burden to the Temple every year) by the evidence of an old pediment sculpture in the Acropolis Museum, and, further, by figures on a Boeotian amphora now in America.

WILLIAM G. NEWTON [A.].

CORRESPONDENCE.

The Lighting of Picture Galleries and Museums.

Christchurch, N.Z.: 10th Feb. 1913.

To the Editor, JOURNAL R.I.B.A.,—

DEAR SIR:—I have to thank Mr. Stanley Hall for drawing attention to what he, and therefore perhaps others, may regard as objections to the system I have proposed for the better lighting of Art Galleries. His objections are fully answered in my Paper (JOURNAL R.I.B.A., 23rd November 1912), but that he has not fully grasped the principles I insisted on nor the manner in which I suggested they should be carried out is, I can readily believe, my own fault in not making them sufficiently explicit. I trust any other of our members who, having studied the question, can see in my system any objections, or can suggest improvements, will also give me the opportunity of considering them.

While welcoming full discussion as the only means of arriving at an ultimate successful issue, I must ask members to do me the justice of reading my Paper carefully, so that a misconception of the principles laid down may not be circulated, and the issue thus confused. Mr. Hall has not done me this justice in respect to his first objection, that of "extravagance of plan," for he states "that for every two pictures measuring 8 feet wide a floor space of 352 square feet would be required." That is not so, for it is clearly stated on page 51 that the length of the gallery would be divided into bays, and that one picture would be hung on each side of the partitions forming them. Mr. Hall has left these out of his calculations, and considered only those hanging on the outer walls of the bays. I stated that the width of the bay would be governed

by the laws of reflection of light. I find by making a section of the bay through the partitions and lights that the maximum width of the bay, for a gallery of the heights given, would be 24 feet. The double bays of this width would have 48 feet of wall space on the outer walls, and, allowing only 4 feet on each partition, a total of 64 lineal feet of wall space for each double bay, which would give 6.1 lineal feet of wall space for each 100 feet of floor space, not 4.8 lineal feet, as stated by Mr. Hall; but the question of economy of space in connection with the housing of pictures of national importance certainly did not occur to me. "A picture that is worth buying is worth so much of room of ground and wall as shall enable us to see it to the best advantage." Surely the charge of extravagance should be made against the expensive top-lighted galleries which have been proved to be but ill adapted for the purpose of their erection, rather than against a gallery which requires, it is true, a few more feet of floor space, but which would enable us to see the pictures to the greatest advantage.

I give in my Paper (page 52) a diagram showing the application of the "top-side-lighted" method to rooms of less importance, in which the central corridor is wholly omitted and the gallery therefore reduced in width to the usual 32 feet. The essential principle of my system is that the top-side-lights are so placed that the space on the walls covered by the pictures is the best lighted part of the room, and this principle can be carried out with or without the central corridor shown in my diagram (Fig. 7, page 51). The advantages of the central covered corridor, however, are such that no important gallery should be erected without it.

Mr. Hall states that the Mappin Art Gallery, which I said was too narrow, is only 5 feet less in width than my own, but he has omitted to notice that while the total width of this gallery is 39 feet (my own for 8-feet wide pictures being 44 feet), 18 feet of it is given up to the central corridor, leaving only 10 feet 6 inches for the depth of the bays. Eighteen feet is an unnecessary width for the corridor, and 10 feet 6 inches would only be a suitable depth of bay for the exhibition of small pictures—5 feet and under. It would not be necessary, as pointed out in my Paper, to make all the bays 16 feet in depth, but there should in all galleries be some of that depth for the proper exhibition of pictures 8 feet wide and under.

Mr. Hall's second objection, "the troublesome reflection in the picture glass of the frames and pictures on the opposite wall," will not exist in a properly lighted wide gallery to the same extent as in a narrow one. It must be remembered that reflected light, like direct light, will diminish inversely as the square of the distance, so that in a room 44 feet wide the reflections from the opposite pictures would be less than half as powerful as those in a room 30 feet wide, and but little more than half those in a room 32 feet wide. Moreover, the great difference in the length of the focal planes of the

picture and the reflections of the opposite picture within it would allow the picture to be looked at without discomfort. Mr. Hall has evidently overlooked these points, but if it should happen that any reflections from very light pictures in very dark ones become too dominant, they could easily be got rid of by the simple expedient of bringing the picture slightly forward at the bottom, as shown by my diagram (Fig. 4, page 47) relating to the reflection of the windows in the pictures. By making a diagram of the possible reflections, it will be found that the picture only needs to be brought forward at the bottom 4 inches in 4 feet to throw the reflection of the opposite pictures much above the level of the eye of the spectator when seated at the correct distance or when standing in the corridor. The pictures on the ends of the partitions will be very well lighted and can be so placed that they will be quite free from reflections from the best point of view.

Mr. Hall also thinks I have made "too much of the question of the light on the floor," and insists, as I had done, on its being either stained or covered with a dark material. Mr. Hall forgets that, although he can stain the floor itself, he cannot apply his stain to the white dresses and hats, white collars and cuffs, and the bald heads of the spectators, which are illuminated in the brightly lighted central space of the usual gallery and have a very painful way of getting themselves reflected in the pictures.

In reference to the lantern lights in the Soane's rooms of the Dulwich Gallery, Mr. Hall has ignored my diagram (Fig. 10, page 54) showing how by raising the floor the pictures would be carried up into the well-lighted wall space which Mr. Hall admits exists above the present line of pictures. He has preferred to put a top light, and, of course, has succeeded in making the room more brilliant, but the distinction between a brilliantly top-lighted room, which must of necessity throw a flood of light on the spectators (see diagram, Fig. 9, page 53), and a scientifically lighted picture gallery cannot be too often insisted upon.—Yours faithfully,

S. HURST SEAGER [F.].

The Safety of St. Paul's.

The Dean and Chapter of St. Paul's have addressed an official letter to the Lord Mayor inviting the Corporation to enter into a general agreement with them for the purpose of safeguarding the cathedral against any future schemes of tunnelling in its vicinity. Canon Alexander has stated that the Chapter felt strongly that some method ought, if possible, to be found of surrounding the building with a permanent line of defence, and there was good reason to hope that the Corporation, who were animated by a most generous spirit in their attitude to the national cathedral, would do everything in their power to reduce the risks to which the fabric was exposed.



9 CONDUIT STREET, LONDON, W., 29th March 1913.

CHRONICLE.

The Royal Gold Medal 1913.

The following letter has been received from Sir Wm. Carington, Keeper of his Majesty's Privy Purse:—

7th March 1913.

SIR,—I beg to acknowledge the receipt of your letter of the 4th instant, and to convey to you the King's gracious approval of the Royal Gold Medal for the promotion of Architecture being this year presented to Mr. Reginald Blomfield, A.R.A., of No. 1, New Court, Temple, E.C.

I also further request you to convey his Majesty's congratulations to Mr. Blomfield on his success.

I am, Sir, your obedient servant,

The Hon. Secretary R.I.B.A.

W. CARINGTON.

Proposed Memorial to Mr. Norman Shaw.

A movement is on foot to erect a Memorial in London to Mr. Norman Shaw. An influential General Committee has been formed, and an Executive Committee appointed consisting of Lord Plymouth [*Hon. A.*], Sir Edward J. Poynter, P.R.A. [*Hon. F.*], Sir Thos. G. Jackson, R.A., Sir Aston Webb, C.B., C.V.O., R.A. [*F.*], Mr. Reginald Blomfield, A.R.A., President R.I.B.A., and Mr. Fred. A. White. A circular issued by the Executive Committee, inviting contributions from the friends and admirers of the late architect, says:—

The reputation of Mr. Norman Shaw is too world-wide for it to be necessary to do more than recall the fact that England abounds in works of his whose place is second to none in the architectural achievements of the nineteenth century. But it is not alone as architect and artist that his memory will live in the recollection of those who knew him and be bequeathed to generations to come. The fine sensibility which is discernible in Mr. Shaw's works was the product of a personality of unusual refinement and dignity, while his relations with all with whom he came into contact were marked by a courtesy and consideration that were as impressive as were his decision of character and his ripe judgment. Moreover, his great influence upon the art of his day is recognised not only by his immediate colleagues and contemporaries, professional and lay, but also by that younger generation of architects who will be responsible for the works of the present century.

Those of Mr. Shaw's friends who compose the Committee desire to lose no time in offering to a larger circle the opportunity of joining with them in erecting a Memorial to him.

It is proposed that this should take the form of a monument with a portrait bust and a suitable inscription, to be placed in front of his great work in New Scotland Yard, facing the Thames Embankment.

It is hoped that this will be designed by Professor W. R. Lethaby, one of Mr. Shaw's pupils, and that the sculpture will be executed by Mr. Hamo Thornycroft, R.A. It is thought that the approximate cost will be from £500 to £600.

Contributions may be addressed to the London County and Westminster Bank, Lombard Street, account "R. Norman Shaw, R.A., Memorial Fund," or to the hon. secretary and treasurer, Mr. Fred. A. White, at 8 Lloyd's Avenue, E.C.

Rebuilding of Regent Street: Committee's Report.

The Report of the Committee appointed to consider the design for completing the rebuilding of the Quadrant, Regent Street, has been issued as a Parliamentary Paper [Cd. 6660]. The Committee was appointed in September 1912 to consider the design, "due regard being had to æsthetic considerations, commercial requirements, and the interests of the Land Revenues of the Crown." The Report, which is signed by Lord Plymouth, Sir Henry Tanner, Mr. Reginald Blomfield, A.R.A., and Mr. John Murray, makes the following recommendations:—

(1) The façade of the Piccadilly Hotel should be treated as the centre of a symmetrical composition, with façades of a simpler character on either side, terminating at the Circus and before Vigo Street, and repeating the motive of the hotel design.

(2) In regard to the question of sky-line the Committee were impressed by the evidence of the majority of the witnesses in favour of lowering it, but, after careful consideration of the question, the Committee find that, owing to the height of the roof of the hotel and the narrowness on face of the pavilions, the difficulty of designing any satisfactory addition to those pavilions such as would stop the roof and enable it to continue at a lower level is, in their opinion, insuperable. The Committee, therefore, recommend that the roof of the hotel should be continued in the new buildings, but that the design of the upper range of dormers and of the chimneys should be modified in order to reduce the obstruction of light.

(3) In the intermediate façades (that is, in the new buildings extending from either end of the hotel up to the pavilions suggested above) the following modifications should be made in Mr. Shaw's design (provided always that the lines of the main cornice and of the string-course above the mezzanine are adhered to):

(a) The columnar recessed treatment of the storeys between the mezzanine and the entablature of the hotel should be omitted and a simple flat treatment without columns substituted for it.

(b) The arcades of the ground and mezzanine floors of the hotel should be omitted and rectangular openings formed for the shop-windows and mezzanine; the span between the piers should not exceed about 25 feet; the shop fronts should be kept back not less than 12 inches from the faces of the piers, but they may project in the form of bays to a line 3 inches back from the faces of the piers. The piers should be of sufficient width to meet architectural requirements and to ensure harmony in scale with the design of the hotel, and the faces of the piers should be kept free of all obstructions excepting small unglazed tablets of uniform size and position.

(4) The bay at the north-west end of the hotel should

be altered so that the new intermediate façades begin immediately to the right and left of the existing hotel pavilions.

(5) The end pavilions should repeat the motive of the hotel, and the general character of the design of the intermediate façades should follow that of the hotel: that is to say, no manner alien to that design should be introduced, such as Neo-Greek, Nash's Classic, or modern French Classic.

(6) The design so modified and simplified should be adopted for the north side of the Quadrant, with pavilions at the ends, but omitting the hotel design in the centre.

(7) The façades of the County Fire Office and the block of buildings facing Piccadilly Circus and Piccadilly should be in harmony with the design of the Quadrant.

(8) No erections above the ridges of the roofs that would be visible from Regent Street should be permitted except chimneys.

(9) The blocking course and the row of stone dormer-windows over the cornice should be continued throughout the Quadrant, and the back wall enclosing at least the two top stories of the new buildings should be kept parallel to the front wall and be treated with due regard to architectural requirements.

The Admiralty Arch: Government Contribution.

A Memorial, signed by 311 Members of Parliament, has been presented to the Prime Minister asking the Government's reconsideration of their decision not to contribute to the cost of making an adequate and artistic approach to the Admiralty Arch from Trafalgar Square. The memorialists point out that the London County Council and the Westminster City Council have intimated their willingness to deal with the matter in a generous spirit, provided that some measure of financial help is forthcoming from the Government. The position of the two Councils, they urge, is a difficult—if not an impossible—one. Two elected bodies are asked to bear the entire cost of the completion of a thoroughfare to which they have already contributed a large sum of money, but over which neither they nor any other elected body will have control. Further, the traffic carried by this thoroughfare will be (most properly) of a selected and restricted character. It is also urged that, inasmuch as the Department of Woods and Forests have derived enormous sums from unearned increment in Pall Mall and its neighbourhood, the Government would be justified on that ground alone in contributing a third of the cost. It is understood that a conference on the question will take place between the two Councils and H.M. Office of Works, and that the Prime Minister has promised that the Government will give a substantial contribution towards the suitable completion of the scheme.

Town Planning and a Road Scheme.

In the House of Commons on the 20th inst.—

Colonel YATE asked the Prime Minister whether his attention had been called to the progress of the town-planning schemes around London, and to the necessity for the adoption of a general road scheme in connection with them; whether he was aware that such a scheme to meet the requirements of the increasing traffic of London had been

published by the Board of Trade, and that if adopted and supported financially a considerable portion of the scheme might be carried out in connection with those town-planning schemes at comparatively small expense; whether he was aware that if these town-planning schemes round London were allowed to mature independently the opportunity for the construction of new main roads in and out of London might be lost for ever; and what steps he proposed to take in the matter.

Mr. ASQUITH: I am aware, generally, of the situation referred to by the hon. and gallant member, and I understand that the Local Government Board keep the Traffic Branch of the Board of Trade informed of all town-planning schemes that are started in the neighbourhood of London, and such efforts as are possible will be made to discourage divergent and inharmonious proposals.

Colonel YATE: Are special steps being taken to secure the opening up of these main arteries in London?

Mr. ASQUITH: I think it would be a great public advantage that it should be done; but there are pecuniary difficulties, as the hon. member probably knows.

Mr. JOYNSON-HICKS: Is the right hon. gentleman aware that the Road Board have a large sum accumulated now and that everybody is anxiously waiting for new roads? Will the Government make some representation to the Road Board? The money is there.

Mr. ASQUITH: If, as the hon. member says, the money is there, that is on the assumption that the Road Board will pay the whole of the expense, which would hardly be satisfactory to the taxpayers.

The Preservation of Leighton House.

Sir Edward J. Poynter, President of the Royal Academy, who presided at the annual meeting of the Imperial Arts League at Leighton House on the 12th inst., announced an interesting scheme for the preservation of Lord Leighton's residence in Holland Park Road. On Lord Leighton's death in 1896 his residence passed to his two sisters, who, believing that a permanent memorial was desired, handed over the property to three gentlemen, in the hope that eventually Leighton House might be permanently secured for the benefit of artists and the art-loving public. During the sixteen years that have since elapsed these gentlemen have succeeded in maintaining the house, partly by small offerings from occasional users of the house, but chiefly by the generosity of Mr. and Mrs. Russell Barrington and Lord Leighton's sisters. Attempts to find trustees in public bodies have failed, owing to the difficulty of providing a real guarantee that the property would be permanently devoted to art purposes according to the original intention of the donors. There was a further difficulty arising out of the obligations attaching to a lease and its determination. The owners of the Ilchester estate are now willing to sell the freehold to the League for £3,000, and the present proprietors of Leighton House are willing to surrender the leases to the League as an incorporated body providing the requisite guarantee in permanent trustees, so that the house may be maintained as a museum and art library and as a central institute and meeting-place for artists. In a letter dealing with the proposal the proprietors state:

Before the transfer of the property can be effected £3,000, the sum named by the vendor to purchase the freehold, and about £15,000 for the maintenance of the house in perpetuity must be obtained, towards which £1,000 has already been given. We appeal to the public for this sum, believing that there are in this rich country true lovers and patrons of art who hold in respect the memory of one who devoted his life to the welfare of art and artists in a catholic and generous spirit, and whose intelligence would recognise that the Imperial Arts League is following closely in Lord Leighton's footsteps in so much as its aims are to benefit all individual living artists, while preserving the dignity and right position of art in our great nation.

We have further to state that this is the last opportunity that can be given to the public to aid in the preservation of this generous gift of Lord Leighton's sisters to the nation—a gift which includes the priceless collection of Oriental enamels in the Arab Hall and in other parts of the house, paintings, and a splendid collection of drawings and sketches by Lord Leighton, which were presented to the house by King Edward VII. and other of the artist's friends and admirers. We feel that if such an absolutely suitable and beneficial arrangement does not appeal to Lord Leighton's countrymen as an object of support we shall, with deep regret, be obliged to close Leighton House to the public—a public which has certainly shown a keen appreciation of it during the last sixteen years.

Any further information can be obtained from the hon. secretary, Leighton House Committee, Leighton House, 12, Holland Park Road, Kensington, W., and from the secretary of the Imperial Arts League, 15, Great George Street, Westminster, S.W.

Canberra, the Federal Capital of Australia.

The ceremony of naming the Federal Capital of Australia and the laying of the foundation stone of the "commencement" column took place on the 12th March. The city is to be known as *Canberra* (the accent on the first syllable), the name of the little hamlet, with its typically English church, which already occupies the site. The "commencement" column is to stand on the slopes of the city's highest hill, in front of the Capitol. The pedestal will be composed of granite from the six States, and, if possible, stone from all parts of the Empire is to be used in the composition of the column. The site is described as a broad and smiling valley, partly hemmed in by hills, through gaps in which glimpses are occasionally afforded of the snow-clad ranges in the distance. The water supply is ample, and the Cotter River is expected to furnish sufficient electrical power for lighting, traction, and manufacturing purposes. The city, it is hoped, will be practically smokeless, and the sewage and storm water will be disposed of by gravitation. Knolls in the undulating valley will provide picturesque and conspicuous sites for the Parliament Houses and Government House.

It will be remembered that the planning of the new capital was thrown open to universal competition, but owing to the unsatisfactory nature of the conditions the competition was vetoed by the Australian architectural societies and by the parent Body in London: consequently, the competition was barred practically to all British architects. Eventually the first premium (£1,750) was awarded

to Mr. W. B. Griffin, of Chicago. In a criticism of the winning design given by Mr. W. R. Davidge [A.] in a lecture delivered at the Garden Cities Association last November,* Mr. Davidge made it clear that the selected plan would in actual execution have to be considerably modified before it could be regarded as characteristic of the best examples of modern town planning. In fact the site would have to be made to fit the plan, instead of the plan being made to fit the site. In some cases he showed that in order to preserve the geometrical figure set forth on paper, considerable excavations would have to be made. The plan also misses the principle of the Garden City—the surrounding of the town by a belt of open country encircling the community, somewhat on the lines of the ring of park lands of Adelaide. Whole areas are set forth in residential districts planned on the ordinary "checker-board" pattern, which in time is bound to produce monotony.

The detailed report of the Board appointed by the Commonwealth Government to consider the designs has now been published, and in several respects bears out Mr. Davidge's criticisms. It is recognised that the premiated plan must be considerably altered in actual execution, and the Board themselves, instead of adopting it as a whole, have prepared a design of their own, based on what they consider the best points in the premiated and other designs purchased by them. The current issue of the *Town Planning Review* describes the plan as "the product of a Department whose personnel is utterly untrained in the elements of architectural composition, whose mind is a turmoil of confusion as regards the association of different buildings, and whose ideas on the simple logic of street planning have resulted in a road scheme which is simply a *reductio ad absurdum*. The whole lay-out is so entirely outside the pale of serious criticism that we feel that it cannot be put into execution. When compared with Mr. Griffin's plan, the defects of which are, after all, aesthetic rather than functional and technical, it is obvious at once that the 'final plan' is the work of an amateur who has yet to learn the elementary principles of laying-out a town."

Fire Tests of Roof Coverings.

There is great need for an effective roof covering that will withstand high temperatures from exposure-fires, and fire brands falling upon such coverings. The British Fire Prevention Committee publish in their Red Book No. 174 an account, illustrated with diagrams and photographs, of the Fire and Fire-and-Water Tests with Asbestos Cement Corrugated Roofing carried out on the 16th October last. Eight roofs were tested: Nos. 1 to 4, pitch 32°, covered with asbestos cement corrugated roofing on boarding; Nos. 5 and 6, pitch 45°.

* *Garden Cities and Town Planning Magazine*, Dec. 1912.

covered with asbestos cement corrugated roofing on purlins; Nos. 7 and 8, pitch 68° , covered with asbestos cement corrugated roofing with ends bedded on wall. The tests demonstrate that an effective roof covering is still to seek, and that further research is needed both as regards its composition and more especially the methods of supporting it. The following is extracted from the Report:—

No. 1. At the conclusion of the fire-and-water test it was found that numerous fractures had occurred in the asbestos roof covering where subjected to the greatest heat.

No. 2. In 30 minutes at the conclusion of the fire test, the underside of boarding was flaming heavily, and the corrugated sheets had developed numerous cracks.

No. 3. At the conclusion of the fire-and-water test it was found that the asbestos roof covering had fractured and pieces had fallen away.

No. 4. At the conclusion of the fire test it was found there were several cracks in the asbestos roof covering, and the boarding on the underside was charred, and that under the seat of fire was destroyed.

No. 5. At the conclusion of the fire-and-water test, one of the asbestos sheets was broken away along the lower edge and was to some extent brittle.

No. 6. At the conclusion of the fire test there were two holes in one of the asbestos sheets, and the top of the lowest purlin was considerably charred.

No. 7. At the conclusion of the fire-and-water test, the lower edges of the sheets were broken off, and the sheets had become brittle.

No. 8. In five minutes an explosion occurred, causing a hole in the asbestos covering of one of the sheets.

R.I.B.A. Prizes and Studentships 1914.

The subjects of competition for the various Prizes and Studentships in the gift of the Royal Institute for the year 1914 are now set, and the pamphlet giving full particulars will be ready for issue in a few days.

COMPETITIONS.

Barnet Municipal Offices.

Valley Workmen's Cottages.

Horbury Public Hall.

Members and Licentiates of the Royal Institute of British Architects must not take part in the above competitions, because the conditions are not in accordance with the published Regulations of the Royal Institute for Architectural Competitions.

Gwyrfa Workmen's Houses Competition.

Members and Licentiates of the Royal Institute of British Architects are advised not to take part in the above competition until the conditions are amended.

By order of the Council,
IAN MACALISTER, *Secretary*.

THE EXAMINATIONS.

The Final: Alternative Problems in Design.

The Board of Architectural Education have approved the designs submitted as Testimonies of Study under the new regulations by the under-mentioned students:—

Subject VI.

A COLONNADED SCREEN.

C. J. K. Clark	A. E. Lowes
George Crossley	W. Voelkel
W. Gougill	

Subject VII.

(a) DESIGN FOR A MONUMENTAL STAIRCASE AND VESTIBULE TO A LARGE MUSEUM.

G. Bennett	H. C. Mason
H. C. Bradshaw	A. L. Mortimer
E. R. Cole	E. Musmann
G. Davidson	B. Newbould
R. S. Dixon	E. B. Norris
R. Duckett	A. H. Owen
W. E. Foale	A. R. Shibley
S. A. Harper	A. Stevenson-Jones
L. S. Henshall	A. J. K. Todd
F. Jenkins	D. P. Trench
A. F. Kaltenbach	R. A. Walter
F. O. Lawrence	A. Wilson
G. M. Mackenzie	W. C. Young

(b) DESIGN FOR A VILLAGE INN.

P. D. Bennett	J. Macgregor
J. W. Bull	G. M. Mackenzie
J. A. Clarke	D. J. Moss
H. T. Cooksey	Mary Shewen
J. C. Farrer	A. J. Sparrow
W. S. Foster	J. O. Thompson
A. L. Horsburgh	P. T. Wilsdon
C. H. James	R. S. Wilshire
H. Liddbetter	A. J. Wood
R. M. Love	C. H. Wright

MINUTES. X.

At the Tenth General Meeting (Ordinary) of the Session 1912-13, held Monday 17th March 1913, at 8 p.m.—Present: Mr. Reginald Blomfield, A.R.A., *President*, in the Chair; 45 Fellows (including 16 members of the Council), 50 Associates (including 2 members of the Council), 9 Licentiates, and numerous Visitors—the Minutes of the Meeting held 3rd March having been already published were taken as read and signed as correct.

Mr. E. Guy Dawber, *Vice-President*, acting for the Hon. Secretary, announced the decease of Herbert Winstanley, elected Associate 1860.

Mr. Dawber also read a letter from Sir Wm. Carington, Keeper of his Majesty's Privy Purse, announcing the King's approval of the award of the Royal Gold Medal for the current year to Mr. Reginald Blomfield, A.R.A.

A Paper on MODERN FRENCH ARCHITECTURE having been read by M. Fernand Billerey, and illustrated by lantern slides, a discussion ensued, and on the motion of Mr. H. Heathcote Statham [F.], seconded by Mr. Edward Warren, F.S.A. [F.], a vote of thanks was passed to the author by acclamation.

The proceedings closed at 10.30 p.m.

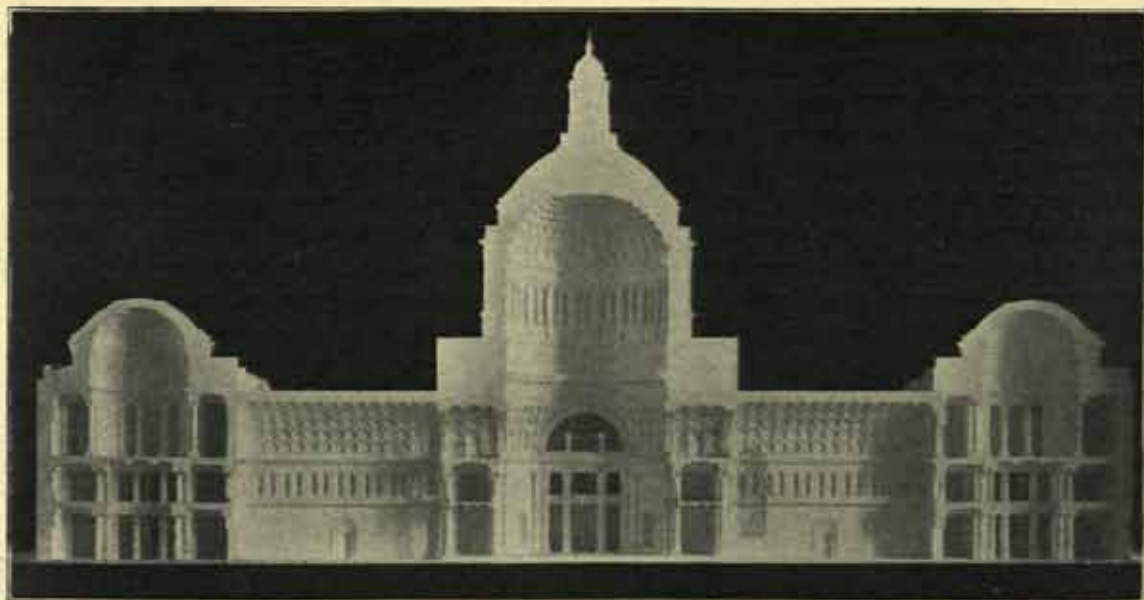


FIG. 1.—BROOKLYN INSTITUTE OF ARTS AND SCIENCES: MODEL SECTION.
(McKim, Mead, & White, architects.)

AMERICAN MUSEUM BUILDINGS.

By CECIL CLAUDE BREWER [*F.*], Pugin Student 1896, Godwin Bursar 1911.

Read before the Royal Institute of British Architects, Monday, 7th April 1913.

INTRODUCTION.

MY task to-night is one of selection. To give even the shortest description of the fifty American museums visited upon my Godwin Bursary tour within the limits of a reasonably humane paper would result in a mere unprofitable catalogue; but as my full report is to be accorded the honour of a burial-place in our Library I intend merely to select a few typical buildings, and, omitting as far as possible the more technical details, to give my impressions of them, discussing chiefly the effect they produce upon the ordinary visitor. I make this selection intentionally, for it is surely the most important class of museum users; the especially interested visitor and the student will find what they are seeking in any museum, while the general public needs very careful handling if it is to use museums otherwise than as mere shelters from the weather or playgrounds for its young.

I shall not attempt to enter upon those mathematical theories as to lighting which have been so fully discussed before in these rooms and in our JOURNAL; but rather to tell you, with the help of my slides, which type of room, plan, or lighting seemed to me best, and why. Dimensions, notes as to heating, ventilation, and general management, as well as many drawings and photographs which it is impossible to show here, these I must leave to the Library student, and if they prove useful to even a very few in after years I shall be satisfied.

While it is probable that more money and more enthusiasm have been given during the last decade to the building of museums in America than in any other country, a tour of inspection of the most important of these buildings did not show, as I had hoped, that the Americans have as yet revolutionised museum and gallery planning, as they undoubtedly have the planning and arrangement of libraries. It is, of course, a far more complex and difficult problem to house, for display or study purposes, the multitude of objects which are, or may be, placed in museums—objects of every conceivable size and shape, requiring individual care and treatment for

exhibition or storage—than it is to house books which vary only from folio to duodecimo and require only to be readily accessible for readers, who in their turn must be provided with reading space; yet I had hoped to find that the museum and gallery buildings of America would show definite characteristics which would differentiate them from their European prototypes.

That this is not so is probably due to the amazing rate at which American museums are growing, and to the fierce and ever-increasing competition for exhibits, fostered by the extraordinary liberality of the American citizens which is manifesting itself in the sale-rooms of the world, and by almost daily gifts or bequests to museums of money or of objects.

This may sound paradoxical, but it seems as if the directors and curators are so occupied receiving and purchasing, arranging for purchases, or sending out expeditions, that they have little time or energy left to study their needs in the matter of buildings, or to specify these needs clearly to the architects, evolving with them a type of building to meet their requirements, in time probably showing other and older countries new methods of arranging and displaying public collections. It is not that the American museum buildings are in any way inferior to European, but there exists on both sides of the Atlantic a good deal of not unnatural dissatisfaction among museum directors at the existing buildings, and this dissatisfaction shows itself largely in indiscriminate abuse of architects, whom they are apt to consider merely as hindrances to museum progress, only rendered necessary by the demand of the public that the buildings shall be something more than warehouses, and of the more enlightened Americans that the public buildings shall be monumental and dignified; which demand is being met, if not by a national style, at least by a certain austerity and simplicity, and is leading to a far greater interest in civic buildings and planning than exists in Great Britain. With all humility, as one of these necessary hindrances, I would ask if a speedier way to the ideal museum buildings than abuse of the architects might not be found in a careful study of existing buildings and of the weary crowds that pass through them, with an effort to discover which rooms seem the most attractive, and why? Which method of lighting or arrangement causes the crowd to linger? Whether objects on which a reasonable amount of light falls are not more easily seen than those which are silhouetted against a dazzlingly bright window? Whether a room from 45 to 60 feet wide, lighted by enormous windows on each side, with a central gangway between an endless succession of cases at right angles to the passer, showing him nothing but reflections of these windows, while the end of the vista is another expanse of glass, is really the best that can be devised for museum purposes?

If these are the ideals of museum men, architects have provided what is wanted, and in many cases the authorities are perfectly satisfied, only stipulating for uninterrupted floor space, plenty of light, and an absence of ornament. I am well aware that these are problems to which all the best museum directors in America, as in Europe, have given, and are giving, great attention; but there are others who seem so wrapped up in classification, the elaboration of labels, the arrangement of exhibits in cases, and of cases by series and groups, that they give little thought to the effect of their collections upon that great mass of the public which scarcely pauses to read a label, or on the small number of intelligent people who, without special knowledge of any particular subject, come with every wish to be interested and instructed, and usually leave sadder and more weary, if no wiser, men.

If real progress is to be made towards the ideal museum building, as yet far to seek in any country, it must be by intelligent co-operation of museum directors with architects, not by stipulating rigorously to the decimal point the exact area of window to floor space in every room; not by insisting on the omission of every moulding and of every feature which could possibly be called ornament, leaving the rooms with the untidy finish of a factory, while allowing as a sop to the feelings of the harried architect a pompous display of ornament in the entrance

hall ; but by a certain sacrifice by both director and architect, by study of existing buildings, and most of all, possibly, by the exercise of imagination and tolerance by both. I cannot believe that America, with its amazing faculty of knowing what it wants, and getting it, a faculty which strikes the Englishman as, perhaps, almost the national characteristic, will long remain satisfied with the ideals and achievements of Europe in museum buildings, any more than it rested content with the almost mediæval ideals of Europe in the matter of libraries, and when the directors have taken the initial steps of finding out what they want, there can be little doubt that the architects of the country which has produced the "skyscraper" will give it them.

I am dividing museums roughly into three classes : General, Art, and Science.

GENERAL MUSEUMS.

Those in this first class are luckily few. I say luckily because, except in the case of small or purely local museums, their catholicity is usually their undoing. It is difficult enough to keep any museum within bounds, and in those which place no limits on the class of their exhibits not only is this difficulty increased, but it is almost impossible to provide suitable buildings for the heterogeneous collections which may at any moment be swollen by the acquisition of whales or wineglasses, mining machinery or miniatures ; further, such museums tend to develop very lopsidedly according to the taste and attainments of the director in charge of them.

I only intend to mention three of these general museums.

BROOKLYN INSTITUTE OF ARTS AND SCIENCES (McKim, Mead & White, architects).

So small a section of this museum is completed that it is difficult to form any estimate of the final result. Only one flank of the great quadrangular plan was in use at the time of my visit, and this entailed the crowding of departments and the use of rooms for purposes for which they were not designed. The plan, by McKim, Mead & White, for the whole scheme shows a magnificent architectural lay-out, but there is not much evidence that it has been studied with a view to special museum requirements. The whole area of 560 feet square is shown, covered with building, the four courts in the angles, 96 feet square, having glass roofs, the exterior and axial blocks carried up three floors ; the heights of the rooms are : First floor, 29 feet ; second floor, 22 feet ; and 20 feet to the lay-lights on the top floor. The exterior, so far as it may yet be judged, is not in the architects' happiest manner, being somewhat cold and lifeless, and executed in a stone of a very dull, even grey colour, much resembling Portland cement.



FIG. 2.—BROOKLYN INSTITUTE OF ARTS AND SCIENCES: MUSEUM BUILDING

The museum has many of the faults of a general museum of arts and sciences, and especially of one in charge of a science director. As an instance, I would quote the allotting of a large gallery in an overcrowded museum to Dr. Goodyear's photographs showing his theories on architectural refinements. These photographs, admirable in themselves, could surely be better studied by earnest students of "architectural misfits" on screens in a study room, and space might thus be set free for the wonderful collection of Sargent water-colours, which were crowded on to a badly lighted staircase landing, and hung, without any taste or discrimination, against cacao-coloured walls. Again, Tissot's small drawings of the Life of Christ, 350 in number, are *all* displayed on screens in a room 43 feet square, and Verestchagin's huge and overpowering crucifixion, measuring 10 feet by 12 feet, is hung next to pictures only 12 inches square.

The main picture galleries on the top floor are 38 feet by 120 feet, and although when the

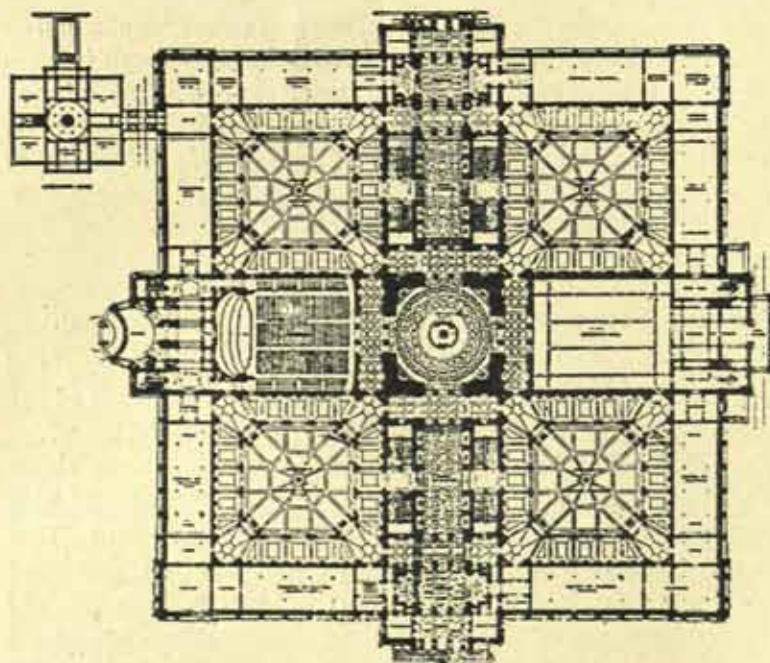


FIG. 3.—BROOKLYN INSTITUTE OF ARTS AND SCIENCES: FIRST FLOOR.

museum is enlarged and smaller galleries provided in addition they may serve admirably for larger pictures, their use, when I was there, showed the danger of such large rooms. Space being required for the temporary exhibition of a collection of large arctic landscapes of a very pronounced type, these were placed on screens in the centre of the room, thus completely annihilating for the time being the permanent collection on the walls. If the big rooms had been subdivided in length, more wall space would have been provided, and a compartment left free for temporary exhibitions of this sort.

The lighting of these rooms is, however, interesting, namely, by long lay-lights on either side and a solid ceiling in the centre; this seems fairly successful, but, architecturally, the effect is very ugly. At present the dignity of the building is much damaged by the use of a small basement entrance, the hall proper being, I presume, too valuable as exhibition space.

Some of the lower long galleries are at present lighted on both sides, windows having been cut in the court side, which will ultimately be filled up, and it was instructive to compare these rooms with those lighted from the one side only; the latter seemed better lit and more comfortable.

Mention should be made of the Japanese Room in the basement, arranged by Mr. Culin. It is entered down steps at both ends, which seems (as in the case of the Halicarnassus Room at the British Museum) to lend dignity and interest; the light is by windows from both sides, screened by Japanese paper. The room is decorated in black and gold, and a certain stylistic effect is very judiciously introduced into the room without being carried too far. The arrangement of the exhibits in the cases is most admirable, although the effect is somewhat marred

more successful, and the exhibits look well against the background of white marble columns and grey-green walls.

The science rooms are chiefly 48 feet wide, those on the ground floor only 15 feet 6 inches high, with beams 2 feet below this, having windows reaching from floor to ceiling on one side only. The lighting is, however, preferable to the similar halls having windows on both sides, but obviously the rooms would have gained enormously had they been another 5 or 6 feet high, and the windows kept up from the floor. The lack of coherent plan in this portion of the museum is very marked, and some of the rooms, such as the gallery of birds, are of awkward shape and ill-adapted to their use. The picture galleries on the top floor vary in size from 62 feet by 130 feet to 24 feet by 72 feet, as if to show the extremes of width that such rooms can be made.

The large room is in its way very successful; its great width and comparative lowness have a very spacious effect, and at the time of my visit a most excellent temporary exhibition of modern pictures was admirably hung in it, on one line only with ample space between the pictures—truly an object-lesson to our own Academy in this matter.

The lighting is by lay-light over almost the whole of the vast area, and, as this lay-light was not only obscured, but very dirty and almost entirely covered with blinds, the glare was not excessive; but, even then, I noted that the light was amply strong enough in a very black thunderstorm, and preferable to the conditions in bright sunlight. The cream-coloured butter-cloth stretched over the grey or green walls of these rooms was one of the most successful backgrounds for modern pictures that I have seen.

The basement contains large storage rooms, workshops and service court, a large art-jury room, engine rooms, and the ventilation plant, and is connected with the upper floors by a lift with a cage measuring 12 feet by 16 feet.

On the third floor are laboratories and workrooms in connection with the museum, but the provision in this respect and for reserve is not very large, though space is being economised effectively by fitting all these rooms with double-deck cases similar to the modern library stacks; this seemed an arrangement well worthy of imitation, for, apart from the saving of space, many more specimens can, in this way, be kept close to and under the charge of the curator.

There is an excellent library on the ground floor for the use of the museum, independently of the main library.

PHILADELPHIA: THE FREE MUSEUM OF SCIENCE AND ART, UNIVERSITY OF PENNSYLVANIA
(Wilson Eyre, Cope & Stewardson, and Frank Miles Day & Bros., joint architects).

This museum, although attached and belonging to the University, is in every sense of the word public, and will in time become the great general museum of Philadelphia. At present its collections are chiefly archaeological and palæontological. The ground plan for the completed building is interesting architecturally, though, as only about one-sixth of the whole is built, it is difficult to form any idea of its success as a museum. The plan, however, offers very fine opportunities for internal effect, and the range of central galleries should be very stately.

The general lay-out is similar to the Boston Fine Arts building, and one is inclined to think that the circuit of the whole museum will be difficult to follow. There seem many possibilities of short-circuiting, no doubt intentional, the idea being to enable any department to be visited by itself, and, naturally, there must be the attendant danger to the casual visitor of missing sections entirely. Again, many of the vistas on the finished plan terminate in windows, and almost every gallery is lighted on two sides.

The portion of the building already in use has a charming brick exterior, although the North Italian-Gothic style adopted does not lend itself to a building requiring special light; the

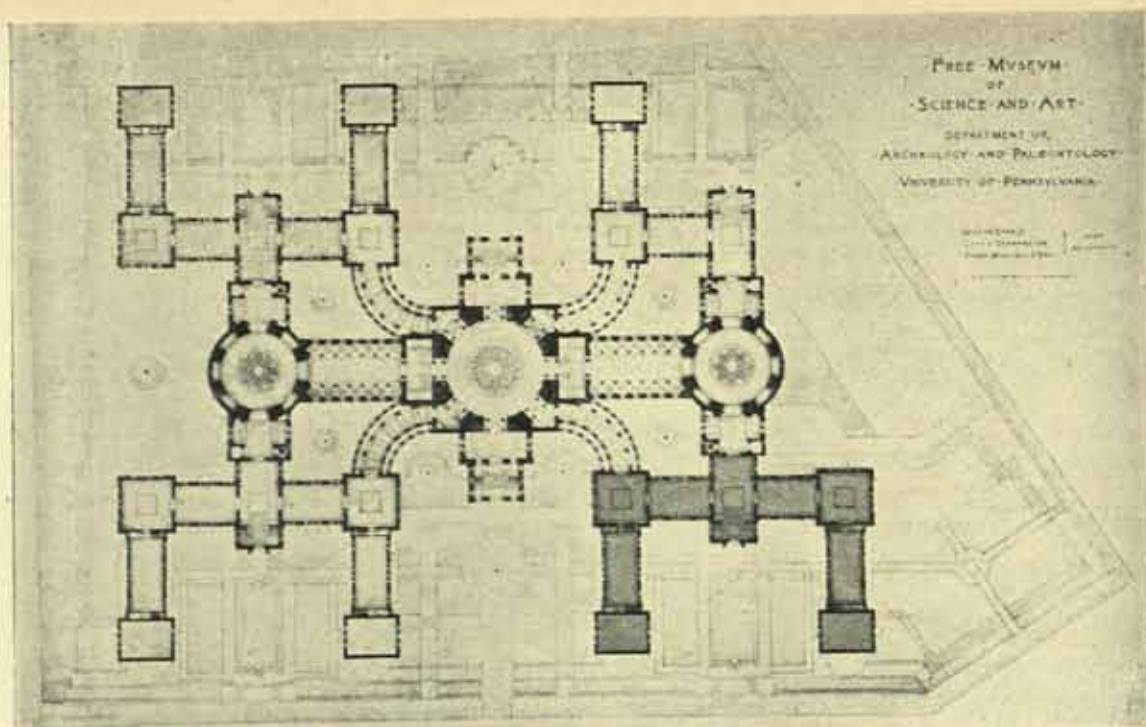


FIG. 5.—FREE MUSEUM, PENNSYLVANIA UNIVERSITY: GROUND PLAN. (Shaded portion indicates part constructed.)



FIG. 6.—FREE MUSEUM OF SCIENCE AND ART, PENNSYLVANIA UNIVERSITY, PHILADELPHIA.
(Wilson Eyre, Cope & Stewardson, and Frank Miles Day & Bros., architects.)

materials, rough brick with very wide joints and marble, are cleverly handled, and the formal garden in the entrance court is a most restful feature.

The effect of the whole is much spoilt by the great door not being used; this serious fault seems common in American museums—certainly the use of the small door under the entrance steps is, in this case, most undignified; but as the great doors open directly on to the staircase landing, there is no room for the checking, umbrellas, &c., at this point.

The evils of cross-lighting are much felt in the present galleries, and the director informed me that alterations to the plans of the subsequent wings are contemplated. The ground floor is devoted to exhibition galleries, with library and lecture theatre at the extremities of the wings, running up into the first floor. The ground floor galleries, in the wings, being 30 feet wide and only 13 feet high, with circular-headed windows on each side, are most unfortunately lighted, and throughout the lowness of the rooms and the lighting, largely the result of the style of architecture, give much ground for criticism; the grey-green colour adopted for the ceilings does not help in these respects.

The central part of the first floor is occupied by exhibition galleries, the wings by administration offices, the basement being devoted to workshops, &c. Complaints are made that the basement is cut up into small rooms; certainly it seems wise to leave the basements of museum buildings as far as possible without partitions, so that space may be allotted to different objects as required.

Little can be said as to the arrangement of exhibits, as departments are at present so crowded, and the lighting renders the placing of exhibits difficult. Altogether it would seem as if the building had been designed from outside, certainly a delightful piece of work.

ART MUSEUMS.

Turning now to the Art section: I found few general points of difference between the American buildings and those in Europe, excepting that the museums and picture galleries are more often united in one building than with us, and in the picture galleries themselves the lighting, which is almost universally from the top, is very generally by sky-lights with a flat lay or ceiling light extending over almost the whole of the room. There are practically no lantern or monitor lighted galleries, and very few of the curved ceilings which have come so much into vogue in England. Double glazing with an attic space is held to be essential on account of the climate, and when one finds directors who admit to endeavouring to maintain a temperature of 70° in their galleries, and more often attaining 75° or 80°, one sees that such achievements would be impossible with a single skylight in the American winters.

FINE ARTS MUSEUM, BOSTON.

The new building in use at the time of my visit was only the first portion of a very large scheme, so that it was impossible to form a complete judgment, but the story of its designing and building is little short of pathetic. It is probable that more study and more care were given to it than to the building of any other museum in the world. Seven years elapsed between the inception of the idea of a new museum and the laying of the first stone; these years were spent in earnest study of requirements and of existing buildings in Europe and America, and the four volumes of reports issued by the Travelling Commission remain one of the most valuable pieces of museum literature. Two years were spent in studying lighting problems in an experimental building purposely built. A fifth volume of the Report was then issued summing up the whole work and containing sketch-plans for the new building by one of the Commission architects, Mr. Clipston Sturgis. This volume seems not to have been widely circulated and a few copies only are in existence; one is reported to be in the British Museum Library.

Plan, Arrangement, Lighting, &c.—The scheme of the museum is to subdivide their visitors and exhibits into three sections: (1) The general public; (2) Visitors especially interested in

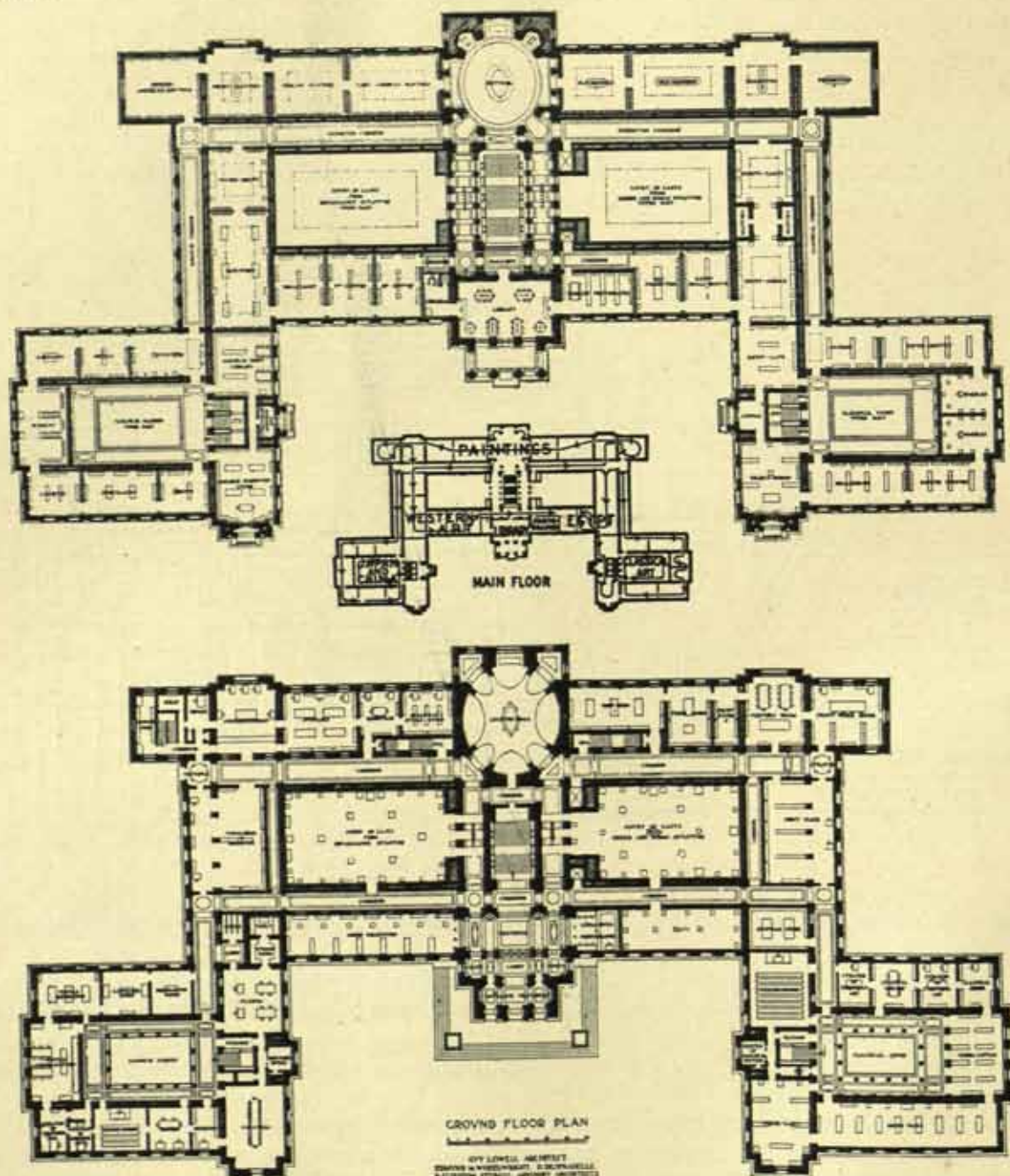


FIG. 8.—MUSEUM OF FINE ARTS, BOSTON, MASS.

one subject or group of exhibits, though not actually coming under the head of students; (3) Students of special branches, who may be provided with workrooms and be allowed to handle exhibits. The plan is especially arranged for these three classes, with independent circuits in

each department so arranged that any one section may be reached from the central halls without traversing any other. This arrangement has advantages: it allows a visitor to reach the department he is seeking easily and without the distraction of seeing other exhibits; it ensures, or should, the subdivision of the subjects by necessitating the return to the hall between each department. But at the same time in practice it leads to complication of plan, for the circuits are by no means easy to trace, and it is annoying to find oneself unwillingly visiting rooms a second time. It is, further, quite possible for one on his first visit to miss a whole section of the museum, and although this may be no disadvantage to the weary tourist if he remains in happy ignorance of the omission, it is galling to find when too late that a section which would have greatly interested him has been missed.

The Entrance Hall on the lower floor is small and unimposing, giving no suggestion of the purpose of the building, but no doubt it is large enough for utilitarian purposes, and the checking-counter and photograph and catalogue room are well placed.

The Two Central Courts are occupied by casts, and although these do not here come in direct contact with actual sculpture, yet, in a museum of such importance it seems a pity that it has not yet been possible to carry out the original plan of placing the casts in an entirely separate block. The remainder of the ground floor being occupied by workrooms and rooms for the second class of exhibits is not therefore intended to be seen by the casual visitor.

On the first floor are installed the general collections, the pictures occupying temporarily the north rooms. The top lighting of these is fairly successful, but they were not in-



FIG. 9.—MUSEUM OF FINE ARTS, BOSTON, MASS.: BUDDHIST ROOM.

tended for pictures, so that one must wait till the permanent rooms are complete to see if the very careful study in the experimental galleries has borne fruit and produces, as it should, the finest lighted galleries in the world. But the present rooms are of pleasant size, and although the glare seemed excessive and the light over-strong, yet the American Room, with contemporary Colonial and English furniture, is decidedly one of the most attractive in America.

Mention may be made here of the background colours used in the newer American museums, usually grey or some neutral tint, which is far preferable to the old dingy maroon or the violent primary colours now coming into fashion in England.

The side-lighted picture rooms are exceptionally pleasing, and all the more welcome as this method of lighting is almost entirely neglected in other parts of America. Few of the pictures at Boston are glazed, and the difficulties of lighting are, of course, thus very greatly reduced; one cannot but wish that other galleries could abandon the glass. There are two reasons usually urged for the glazing of pictures: first, the protection it affords from atmospheric as well as from careless or malicious damage; secondly, the glow added to paintings, which is undoubtedly

of great value. A recent outrage in our own country has reminded us that glass is not a complete protection from malicious damage; and, if the air in galleries can by any means be rendered reasonably pure, the other risks might surely be incurred, for it is now in most galleries impossible to see the whole of a large picture at one time, especially if it is dark in tone, and the constant strain of dodging reflections is most fatiguing.

The central corridors on the ground floor are very dark indeed, while the side-lit rooms are most unpleasantly over-lighted in spite of the fact that on the four days on which I visited them, at the end of April, the blinds were continuously drawn, even on the north side. It is, of course, impossible to make comparisons of lighting between England and America, and I have no means of judging what the light may be in winter, though I was told that in fair weather it is as strong as in spring, but during May and June it was very much more intense than even on our brightest days. To eyes accustomed to English lighting almost all the American galleries seemed over-lighted. I imagine that the proportion of 18½ per cent. of window to floor area, so rigorously insisted upon for side-lighted rooms at Boston, would be much more suitable to English conditions; it is a pity therefore to have disfigured the exterior with such large windows, which are continuously kept shaded.

The beautiful Japanese collection is shown in rooms to which some Japanese feeling has been given, and while one is at first inclined to welcome the experiment with delight and rejoice in the exquisite effect produced, especially in the garden court, a little reflection leads one to the conclusion that such stylistic settings must be carefully employed. We should probably all of us admit that it would be impossible to instal a collection of mediæval objects against a modern Gothic background with anything but horrible results; I wished it had been possible to obtain the candid opinion of a cultivated Japanese on these Boston rooms. At the same time, after many weeks spent in visiting museums, one looks back upon this Japanese department as upon an oasis in a desert of glass cases, surely at the best a barbaric method of exhibiting objects of art.

In the Japanese department, even in those rooms which have not a definite background-setting, an effort has been made to design appropriate cases of slightly Oriental character; the result is distinctly interesting, while the very highest praise must be given to the actual arrangement of objects, particularly pottery, in the cases themselves, which is so beautiful that a definite picture of individual cases remains with one. One is the more glad to record this, as in some rooms the arrangement of exhibits does not seem happy. Small objects are dwarfed by large rooms, as in the Classical Court; a beautiful little Rodin is almost lost at the top of the stairs, while in the Egyptian section large statues are cramped into small rooms.

The library, a good room over the entrance, acts as a reading-room and a store chiefly for the folios and photographs. The former are kept flat on iron roller-shelves in oak cases. The librarian's room adjoins, and from it a spiral stair leads to the stack above in attic.

If one is over-critical in judging this museum, which after all is one of the most interesting art museums in America, if not in the world, it is only that, knowing the study and care that had been bestowed upon its building, one had hoped to find the ideal.

THE METROPOLITAN MUSEUM, NEW YORK.

This is the largest and most important Art Museum in America, and certainly one of the most interesting to a student of museum architecture, as the buildings are of three dates, and one is delighted to find that the latest addition is probably the most satisfactory museum building on the continent. The old museum dates from 1875-1880, but it is now intended to surround this extremely ugly block entirely with new buildings. Between this old museum and Fifth Avenue is the new entrance block by W. M. Hunt, added in 1902. It is a fine, if somewhat heavy,

classic building in three bays, and the interior of the hall is exceedingly dignified and excellently lighted. It has not the excessive glare so loved by American museum directors, but a mellow light from great clerestory windows, pleasantly diffused and surely quite sufficiently strong for displaying the few pieces of sculpture and tapestry to which its exhibits are confined. On several days in May it appeared that the lighting would have been even more satisfactory if the dome-lights were closed, but I found that two of these were an addition by McKim, the hall having been originally designed and built with one central light only, so it is evident that the museum directors would not have been content with the clerestory lighting alone. However, I do feel sure that the general effect of the hall would be greatly improved if the windows visible under the end gallery were cut off by screens. The emptiness and fine architecture add enormously to the dignity and repose of the museum, and although many protest against the

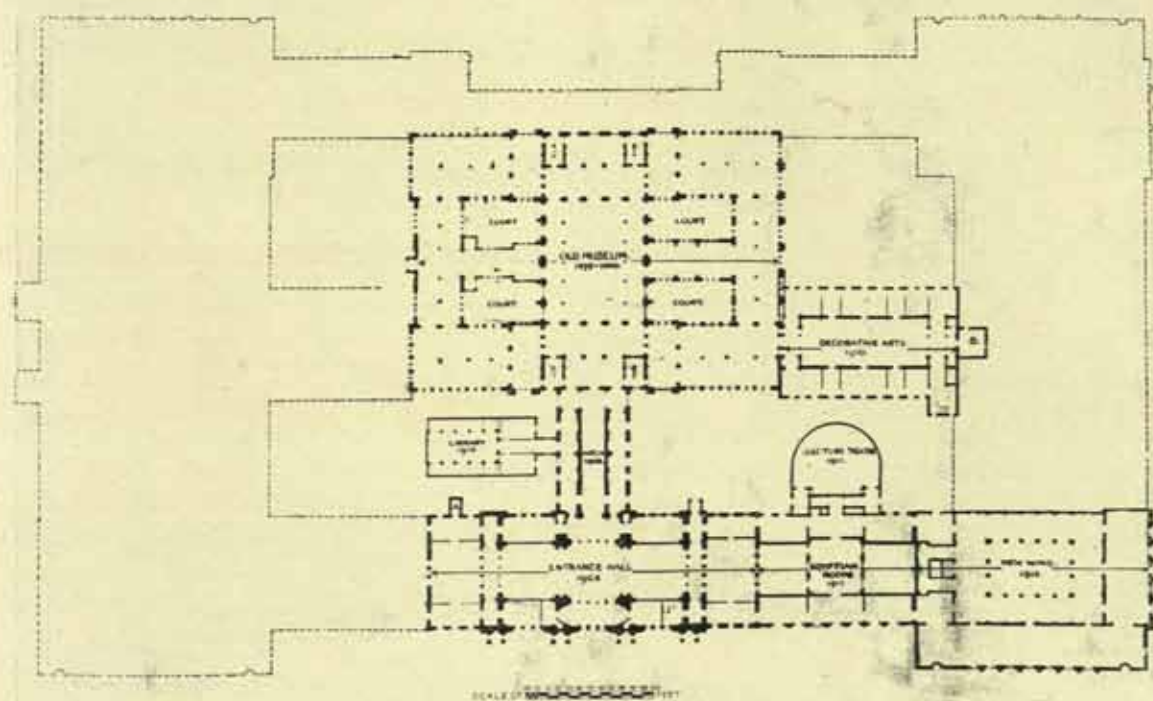


FIG. 10.—METROPOLITAN MUSEUM, NEW YORK CITY.

waste of space and the subdued lighting, it is surely right that a great and wealthy museum should allow itself the luxury and dignity of such a hall, which is an excellent preface to the beautiful collections to come, or a resting place after a visit.

There is a very good photograph and literature counter off the entrance vestibule; not only is an excellent collection of photographs and all the museum literature shown, but a comfortably furnished room is provided for the use of visitors who wish to select photographs or look through and make notes of the museum publications. This is a feature of many American museums which might well be copied in England, as might also the means that are taken to popularise American museums by periodical literature. Persons interested in the welfare of a museum can become members by paying an annual subscription, which gives them not only the privilege of entry on students' days, but to them the museum bulletin is sent, which contains photographs of the recent acquisitions, critical articles and notes on the museum's progress; in this way a large

number of people are kept in constant touch with the museum and informed of interesting temporary exhibitions.

The plan of the museum with interior open courts, which are not seen or entered by the public, allows the building-out into them of alcove rooms; this is an advantage which is likely to be largely made use of, compensating somewhat for the absence of a central garden court.

The new staircase is fine in plan and general conception, but somewhat clumsy in detail and too ornate for museum purposes.

The original building resembles the old South Kensington Museum and has all its defects; the high top-lighted courts containing architectural and other casts have the effect of dwarfing



FIG. 11.—METROPOLITAN MUSEUM, NEW YORK: ENTRANCE HALL.
(W. M. Hunt, architect.)

the smaller original exhibits, and are much overcrowded. It is difficult to suggest a satisfactory method of exhibiting such large architectural pieces—probably a very large perfectly plain hall with the lightest and simplest iron roof is required, as far as possible detached from the other collections. It seems as if the fine new architectural courts at the Victoria and Albert will scarcely prove high enough or simple enough for the largest objects, and the conflict of the architectural features of the building itself with the exhibits, shows that such halls cannot be too simple; certain it is that the whole scale of many museums is destroyed by such objects; if they are to be preserved and shown, special provision must be made for them.

The models of buildings shown in these halls of casts are somewhat lost; a small-scale

model of Notre Dame, Paris, is not seen to the best advantage at the foot of a full-size cast of the Colleone Statue, and it would be well, in all museums, if models could be shown in a smaller room adjacent to the hall of architectural casts, although of course there are cases, such as the Elgin Room at the British Museum, where the model of the Parthenon is quite rightly placed for reference with the actual exhibits.

The side-lighted rooms in the old building suffer a good deal from cross-lighting, and those lit from one side only from too great a depth, but these, even where the back wall is a little under-lit, seem preferable to rooms of the same width with windows on both sides.

The Picture Galleries are upon the upper floor of the old building, some of them overcrowded and ill-hung, but they are moderately well lighted and free from unpleasant glare. The lay-lights, which are glazed with very much obscured glass, are only from one-half to two-thirds of the area of the rooms and seem preferable to the new type of American ceiling, which is almost entirely of glass. As, however, the skylights are set in one side of the mansard roof, the light is not equally good at all hours of the day, and the rooms can in no way be said to be ideal. The pictures are mostly unglazed.

The new wing of Decorative Arts, added by McKim, Mead & White, is altogether admirable. It was built for the Hœntschel Collection, and Mr. McKim using, it is said, the Musée des Arts Décoratifs at the Louvre as his model, obtained a result superior in every way to that original. Indeed, having since seen the Paris building, I am tempted to believe that he merely used it as a label to satisfy the American craving for a prototype.

The wing consists of a large central hall running up through two floors of smaller side-lit rooms. The lighting of this hall, which is 46 feet 3 inches high to the springing of the semicircular vault, and 67 feet 3 inches to the crown, is entirely by lunette clerestory windows, and no doubt the great height and the area of white wall below are largely responsible for the beautiful soft diffused light which floods every part of it.

Objection has been raised to the use of classic columns in a hall for mediæval objects and that there is too much architecture for such a gallery, but I would rather claim that the happy mean between a barn-like barrenness and a stylistic room had been struck. The only other hall that I can think of, where such objects would have been as well shown, is the great Roman Hall at the Cluny Museum—that is to say, under much the same conditions of very high side light.

The fine tapestries are well lighted and have a very decorative effect high up on the side walls, but as no blinds can be fitted to the semicircular windows, it is necessary to draw curtains over the tapestries when the sun is upon them. One would be very interested to see the effect of pictures hung on the lower part of the walls; it is sure that the beautifully diffused light would be admirable, but probably the great height of the room would dwarf pictures of ordinary size; and yet if only this clerestory lighting could be adapted to lower rooms, we should probably arrive somewhere near to the ideal of a perfect picture gallery.

The side rooms are 24 feet wide and 20 feet high, the window heads being right up to the ceiling, the sills 8 feet from the floor. They are admirably proportioned, and their simple

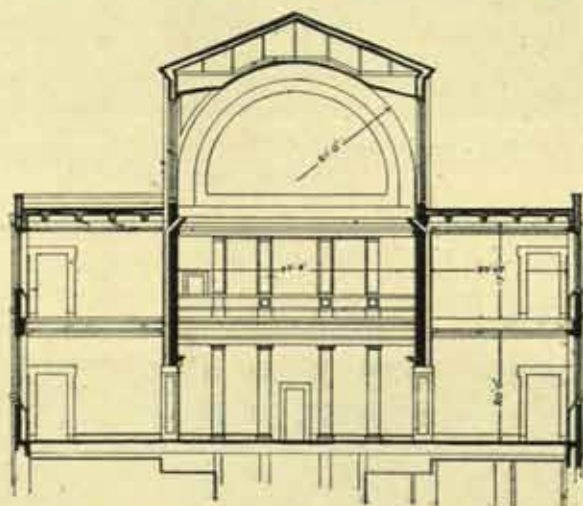


FIG. 12.—METROPOLITAN MUSEUM OF ART: SECTION THROUGH DECORATIVE WING.



FIG. 13.—METROPOLITAN MUSEUM, NEW YORK: SECOND GOTHIC ROOM.
(McKim, Mead, & White, architects.)

happy addition. It seems perfectly adapted for its purpose and has dignity and architectural interest; again, the high clerestory light has that restful quality which is so noticeable on coming from other museum rooms.

The heating and ventilation of the Decorative Arts Wing are on an elaborate and very



FIG. 14.—METROPOLITAN MUSEUM: CENTRAL HALL, DECORATIVE ARTS WING.
(McKim, Mead, & White, architects.)

great, it is thought to be preferable to the ordinary atmospheric conditions in American museums; certainly the extreme changes of climate and the excessive steam heating have

cornices, door architraves and fabric-covered walls, give them just sufficient finish, while every object is well placed, well lighted and grouped by periods, so that there is a fine sense of congruity in each room. One little criticism I would make: the doors on the lower floor, between the hall and the side rooms, seem unnecessary—they occupy good wall space and are apt to lead visitors back into the central hall instead of continuing on the circuit.

The Library, again by McKim, built in 1910 in one of the courts, is a very

costly Plenum system, the aim (in view of the large amount of valuable wood-work the wing was to contain) being to provide an equable atmosphere entirely independent of the outside air and of the temperature of the other galleries. In May 1911, when I visited the building, the outside temperature stood at 80°; in the other parts of the museum at 76°, and the air was there oppressively close; while the thermometers in the new wing never rose above 66°, and the air seemed fresh. Whatever may be the faults of the system, apart from the cost, which is admittedly

played sad havoc with museum exhibits all over the country. These rooms were decidedly more comfortable and the air fresher than in almost any other museum I visited.

Workshops, Administrative Rooms and Reserve.—While there is no definite reserve section to the museum, the whole of the basement is devoted to workrooms, vast stores, and workshops for every conceivable class of repair, case-making, &c. There is a large receiving store into which new acquisitions and objects offered for loan or sale are placed. Here every article which passes into the museum stock is at once indelibly labelled, photographed, and card-indexed.

ART INSTITUTE OF CHICAGO,* erected 1893 (Shepley, Rutan, & Coolidge, architects).

This building formed part of the World's Fair, the Art Institute paying more than half its cost in order to obtain a permanent, in lieu of a temporary, building. It is situated on the lake front, and comprises not only a picture gallery and general art museum, but an art school, which, with 700 regular day students and a total roll of 2,500, must surely be one of the largest in the world; it occupies not only the whole of the basement, but a range, 675 feet long, of forty-three class and studio rooms to the east of the building, which being sunk below the level of the ground is not visible from the lake front. The main building is a great quadrangle, bisected by the grand staircase, the two courts being filled by the lecture theatre and library.

The plan is interesting owing to the corridor which runs completely round the inside of the exhibition rooms. This is an excellent arrangement for a gallery which holds many temporary exhibitions. The pictures in some of the rooms here are changed as often as thirty times a year, and any gallery can be closed without interfering with any other. In the case of the permanent collections on the ground floor, which is entirely given up to casts of sculpture, the benefit is not so obvious, the corridor giving a double circuit, which is distracting. The treatment of the angles of the corridors is most unhappy. The object was to give vistas into the galleries, and at the same time to obtain wide rooms at the angles; the result is unarchitectural and awkwardly managed.

The lower side-lighted rooms are excellent; cross and end-lighting have been carefully avoided, and the exterior and interior gain enormously from this. These rooms are 38, 34, and 28 feet wide, and about 20 feet high. The 38-foot rooms are a trifle too wide; the 28 feet are as nearly perfect as can be. The windows are 7 feet wide and are spaced at 15-foot centres, and have sills 5 feet 6 inches, and heads 18 feet from the floor. I would ask museum directors to note that the window glazing was originally in one sheet of plate glass, but this was thought to be so ugly from within and without that glazing bars have since been added on the main front.

The Picture Galleries on the first floor are remarkable for their variety in size and in height. Mr. French, who has been Director from the foundation of the museum, is a great advocate of small picture galleries; he claims that they give more wall space, and greater possibilities of subdivision and arrangement, are less tiring to spectators, and that in the case of additions or rehanging a smaller number of pictures need be moved.

The Blackstone Hall of architectural casts is an addition to the original plan, and occupies the whole of the centre of the basement and ground floors at the rear, the ground floor corridor being used as a balcony along one side. A hall 210 feet by 60 feet by 34 feet 6 inches high is thus obtained. Even this is not large nor lofty enough for the largest exhibits, but the lighting, which is chiefly from one side, is altogether admirable. The eastern windows are 7 feet wide, spaced on 15 feet centres, and have sills about 15 feet, and heads about 31 feet from the floor. The western windows are on the balcony only, and are so much blocked by the library and lecture theatre as to be negligible, and yet the hall is one of the best lit that I saw.

The lighting of the picture galleries is by sky- and lay-lights, the latter being almost the whole

* A plan of this museum appears in Mr. Edwin T. Hall's Paper, "Art Museums & Picture Galleries" [JOURNAL R.I.B.A., 13 April 1912.]

The building is a dignified little museum both within and without, and the simple plan gives no chance of confusion. Under the main frieze on the exterior are a series of open-work marble panels which ventilate the space between the glass roof and the lay-lights. In spite of these, however, in June the heat in the upper rooms was quite intolerable, and in the hottest season the building is said to be unusable. Evidently, in the Washington climate, such top-lighted buildings require a very special ventilation or cooling system, but this was the only criticism which I heard in connection with the building.



FIG. 16.—THE CORCORAN GALLERY OF ART. (Ernest Flagg, architect.)

ALBRIGHT ART GALLERY, BUFFALO (Green & Wicks, Buffalo, architects).

This is, architecturally, the most nearly perfect art museum that I visited. It owes its being to the generosity of Mr. Albright, and no money, care, or thought have been spared to make it as complete as possible. It occupies a splendid site in the public park, above the lake, and the lay-out has been most carefully studied, the approaches and terraces being magnificent. The whole is, indeed, very dignified without being bombastic. The style selected is pure Greek, and the same Ionic order is carried through both the interior and exterior, except for the portico, where a larger scale is adopted. But the style is more humanely treated than at the Boston Art Museum, and the whole is more gentle than either the Corcoran Art Gallery or the Chicago Art Institute, while for suitability to its purpose the interior must rank with the Decorative Arts Wing at the Metropolitan. I regret that I only saw it on two grey days, with very brief intervals of sunlight, and was therefore not able to judge very well of the lighting. Without the sun it was entirely excellent; but with it there was some glare, and I noted that the walls of the long galleries were then unequally lighted, the north being very much brighter than the south; this is probably due, in a great measure, to the shallowness of the attic space between lay- and sky-lights, and could be obviated if reflective screens were hung in this space on the east and west line. Few of the dark pictures were glazed, and there was therefore little trouble from reflections, except from the light-coloured floors. The glass ceilings to the galleries, which are constructed of small "T"-iron bars, are not very architectural, although they admit the greatest possible amount of light and the proportions of the smaller rooms are somewhat well-like. The public rooms, all upon one floor above, are nicely varied in size, though all except the sculpture gallery are small. The windows shown upon the plan have all been blocked up;

the gain to the galleries from their use was not thought sufficient to compensate for the lack of wall space. One is inclined to regret this, especially as side-lighted picture galleries are very rare

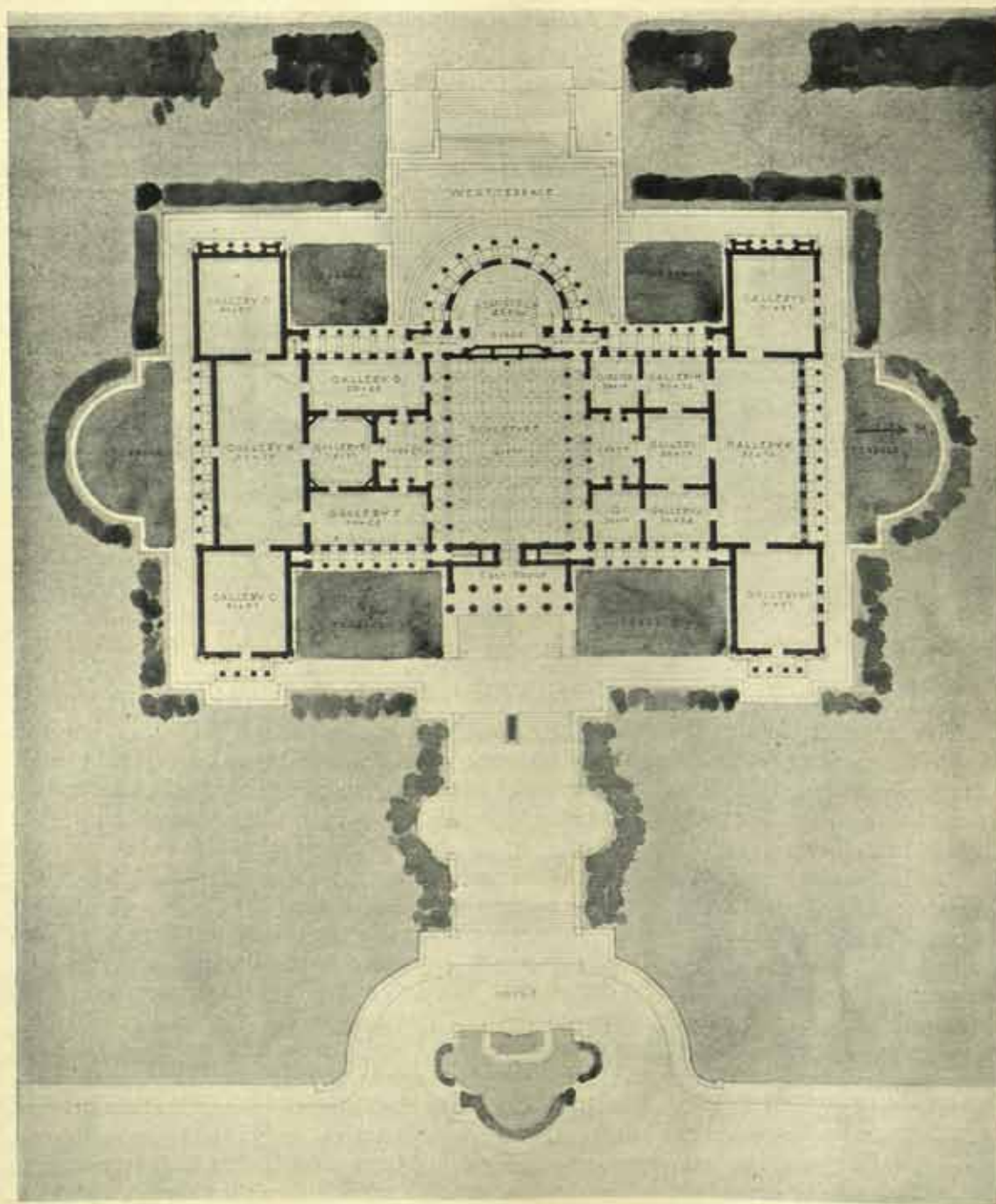


FIG. 17.—ALBRIGHT ART GALLERY, BUFFALO.

in America, and one tires of the everlasting strong top-light, which is certainly most unsympathetic to many old pictures.

On the other hand, a good deal of valuable wall space could be gained by blocking up some of the doors in the galleries. It will be seen from the plan, that of the thirteen public rooms, two have five doors, four have four, and three three, and as the majority of these are in the centre of the walls, the best positions for pictures are lost, without any gain to the circuit of the museum.

Gallery F was in use as a print room, and one could wish that some special lighting had been provided. Wall cases in a top-lighted room do not offer the best means of display, and side-lighting and wheel screens and desks would probably be more satisfactory.

The finish and interior decoration of the rooms is excellent. White marble is used throughout for columns and architraves, beautiful blue-black or blue-grey marble for the dadoes. The floors are of sanded Tennessee marble, rather dark in the picture galleries, and lighter Tennessee with green inlay in the sculpture court. The walls are covered with various textiles,



FIG. 18.—ALBRIGHT ART GALLERY, BUFFALO. (Green & Wicks, architects.)

the most satisfactory being butter-cloth over coloured distemper; but all the colours are low in tone, and all the cornices, ceilings, &c., cream-coloured.

The exterior is entirely of white marble, with copper roof, and is worthy of the highest praise, although the east front is somewhat spoilt by the addition of rather meaningless caryatid balconies, for which rough sketches were left by St. Gaudens. Had the sculptor lived to see them on the completed building, one feels sure that they would have been considerably altered and improved. Owing to some trouble with his executors, they were, in 1911, being executed in marble by his assistant, without alteration.

A word should be said as to the management and arrangement of the gallery. Money, which has been so unsparingly but so judiciously spent upon the building, is not stinted in this respect. The director makes two journeys a year to Europe to collect pictures for the exhibitions. Quality is more considered than quantity, and the walls are not overcrowded, while the pictures are hung with the greatest possible care and taste.

Altogether, a visit to the institution, housed in its beautiful building, on this wonderful site, and filled with a really admirable collection of modern pictures, is an artistic treat, and an object-lesson of what can be done by a wealthy private citizen in a small town if he is so ably advised and has such great taste as the donor of the Albright Art Gallery at Buffalo.

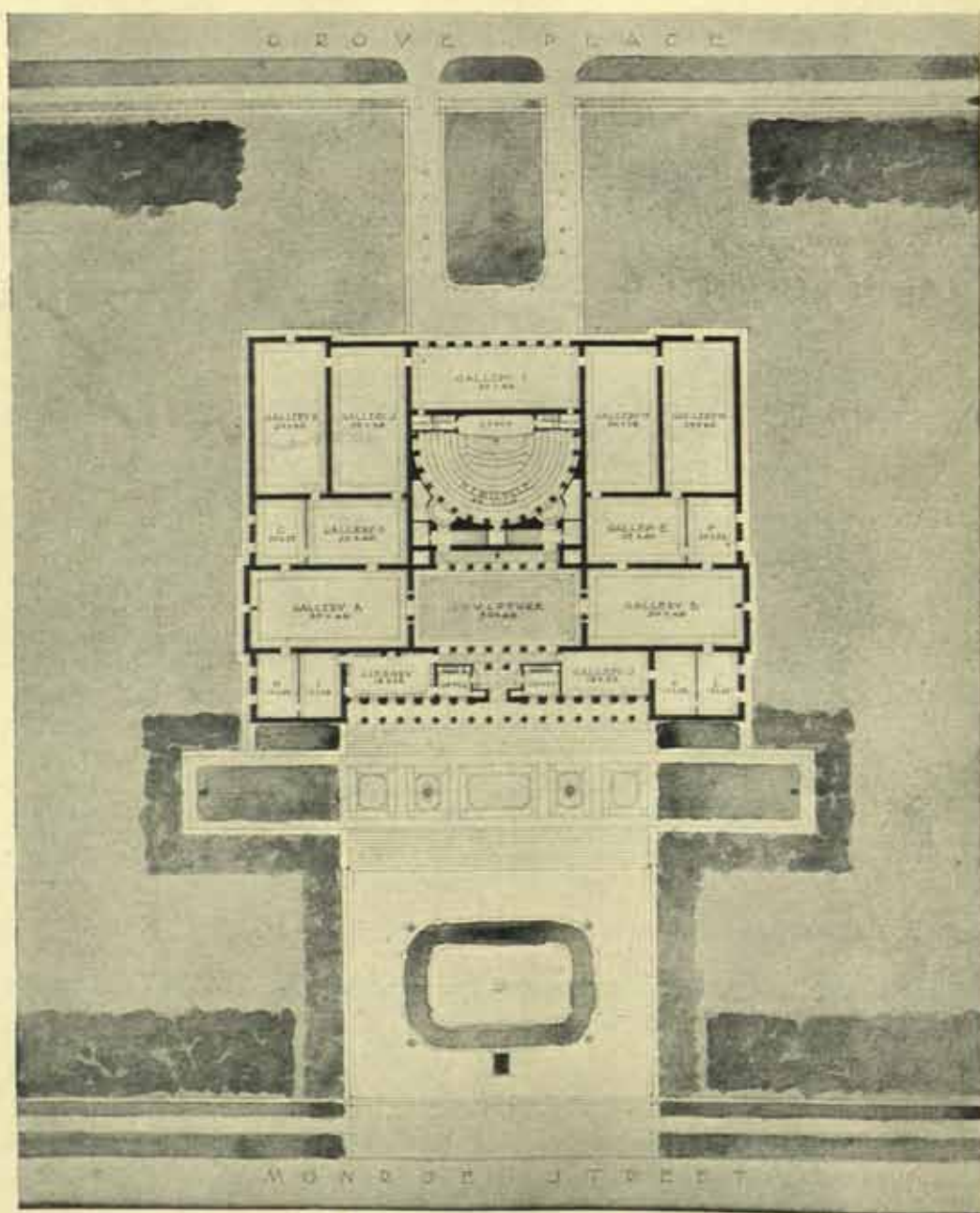


FIG. 19.—TOLEDO MUSEUM OF ART: PLAN.

THE TOLEDO ART GALLERY (Green & Wicks, Buffalo, architects).

I was induced by the success of the Albright Gallery at Buffalo to retrace my steps to Toledo, to see the new building there by the same architects; and though the Toledo Museum was not quite complete, I did not regret the two nights' journey the visit entailed.

It owes its existence to a private donor, Mr. Libby, and although it is rather smaller than the Buffalo building, and has not such a fine natural site, still, its setting in the small park is made the most of, the lay-out of terraces, steps, and planting having been most carefully studied. Only the front galleries and the hemicycle were in construction; the other portions are to be later additions. The outline of the plan is more simple than that of the Buffalo Gallery, the exterior gaining by this and by the absence of the two orders. The construction is very similar, pavement lights being largely used for the flat portions of the roofs, and the same plain bar ceilings as lay-lights. The photographs, which have been kindly sent me by



FIG. 20.—TOLEDO ART GALLERY. (Green & Wicks, architects.)

the architects, were taken since my visit, and show the very dignified treatment of the interior and exterior.

MUSEUMS BELONGING TO THE LEARNED OR ARTISTIC SOCIETIES.

At Portland, Maine, a charming little gallery building has been attached to the Sweet Mansion, an old colonial house lately bequeathed to the Art Society of Portland, with the restriction that the principal rooms in the old house should remain exactly as in use at the time of the testator's death. The architect of the new building, John Calvin Stevens, has very successfully adapted the colonial style of the house to the gallery building.

The Hispanic Society's Museum at Audubon Park, New York, is grouped on one terrace with that of the Numismatic Society, and the Geographical Society's building was being added in 1911. This grouping of small museums seems a plan worthy of imitation and opens up possibilities for a great series in a public park, thus allowing close communication, and at the same time saving the public the great weariness of large museums.

The Essex County Institute at Salem has a large chapel-like hall in the rear of its Historical Library in use as a museum. The space under the galleries is screened off to form alcove historical rooms, showing how much can be done in this way without special provision being

made. The garden in the rear of this last building is being converted into an open-air museum. Already an old shoemaker's shop, with all tools and furniture, is on view; and a baker's cottage of two floors, with its great brick chimney, has been moved bodily to the site and was being installed. An old dip-well and similar objects are also in the garden, which is planted with only such flowers as are known to have flourished in the early days of New England. Such open-air museums are sadly few in England; one would like to see them installed in many towns, where they would form sanctuaries for old buildings about to be destroyed, especially if we could import a few American house-movers to teach us the art of rolling buildings from one place to another.

Of the New York Historical Society's Building (Architects, York and Stevens), only the central portion shown upon the plans was completed in 1911, but the fine classic façade looked exceedingly dignified even without the end pavilions. The ground-floor rooms, intended for receptions, were being used as museum galleries, but as the windows have sills only 3 feet from the floor and heads 10 feet from the ceiling, the lighting is not good. The great gallery above is 40 feet high, and as the window sills are 8 feet from the floor and the ceiling barrel-vaulted, the lighting for pictures is excellent; but it seems a pity to have cut up the wall surface by pilasters, although this room was intended as a museum, and the picture galleries are to be built in the wings. The whole will form a very complete home for a learned society, being most carefully thought out.

SCIENCE MUSEUMS.

AMERICAN MUSEUM OF NATURAL HISTORY, NEW YORK (Vaux, Caddy, Charles Volz, Trowbridge & Livingstone, architects).

This is the oldest of the Science Museums. A very large scheme for it was prepared by Clement Vaux in 1871. The existing buildings are still but a fragment of this scheme; and though only one block was built under his direction, the additions which have been carried out almost continuously under various architects have adhered somewhat closely to it. Indeed, one is surprised to find the authorities proposing, in the large additions now under consideration, very little change in either size or type of galleries, which are all reminiscent of those at the British Museum of Natural History at South Kensington.

Vaux's plan shows a hollow square of about 700 feet, the north and south sides being carried out as wings. These wings were never built, but the south façade was terminated most unfortunately with circular turret rooms about 30 feet in diameter. One is glad to find that these are not to be repeated at the two remaining angles, for they are surely the worst form of exhibition space, unless, indeed, a gangway could be carried round close to, and under, the windows, and the centre divided by high screens into alcoves.

The interior courts have shared the fate of so many in this type of plan, and have been, or are to be, occupied by large top-lighted halls.

The accepted idea of a natural history museum—namely, of halls about 60 feet wide, lighted on each side, the windows being as large, and the rooms as long and as unimpeded, as possible—may lead to excellent results in classification and arrangement from a scientific standpoint; but surely the effect is one of extraordinary dreariness to the average spectator. The doors are usually placed in the centre of each end, so that the gangway naturally follows the axial line; indeed, in some instances here, the cases—which are placed transversely to the room—are butted right against the walls, allowing no passage between them and the windows. If a person passes along one of these rooms and notes carefully what he has seen or can see from the central aisle, he will find that with desk or table cases he has noticed an enormous area of reflections on glass, and a certain number of small dark objects through the glass. If the room is filled with larger

cases of mammals, &c., he has again seen a great many reflections, and in addition the silhouettes of many animals, and occasionally the side of some, really almost well lighted.

It may be that the visitor is really bent on examining the exhibits and industriously examines the cases in two or three rooms about 200 feet long, by which time, having been occupied in dodging reflections, he is weary and walks hurriedly up the centre aisle of the remaining rooms, gaining nothing thereby but additional fatigue. It is possible that such rooms as the great Egyptian Hall at the old British Museum were the original models in this matter, though the conditions there in a room about 31 feet 6 inches high, with the windows kept 13 feet from the floor, none of the objects being under glass, are entirely different, and we must all admit that this hall is one of the most effective, inspiring, and entirely satisfactory in any museum.

It might be thought that the American Museum of Natural History in particular would, in their new building, endeavour to find a more satisfactory solution of these problems of lighting and arrangement, for in one department they have installed a series of exhibits of wonderful beauty and interest, displayed to the spectator in the most advantageous way possible—namely, the birds' habitat groups in the Ornithological Department.

These groups, as will be seen, have been fitted up in the gallery of an existing hall, which did not lend itself to them in any way, and years of experimental work have been necessary to arrive at the present lighting and arrangement, and even now electric light is resorted to for many hours in the day; but, in spite of this, the results are so fine, the backgrounds are painted with such skill, the taxidermy is so naturalistic, and the accessories so well arranged, that one lingers there with delight. The spectator is, as may be seen by the section A A, in comparative darkness and looks through the window at the group, which is well, but softly, lit by reflected light from above. There is no reflection on the glass and no eye-strain.

The museum contains a large number of mammal and anthropological groups, some with and some without backgrounds; and one would hope to see the Ornithological Department's arrangement adopted for these; there seems no reason why special halls should not, in that case, be built for all background group cases.

A natural history museum suggests itself where the general public should be admitted to only a very small synoptic collection of group cases in specially built and lighted alcoves, and adjacent to these, in each department, first the collections for those specially interested, beyond these again, the reserve collections for the actual working student. At present all that is asked for is elasticity of plan, so that temporary divisions may be erected and the grouping of cases varied and screened as required; yet in all these large museums I found hardly any temporary divisions and practically no screening to improve the light.

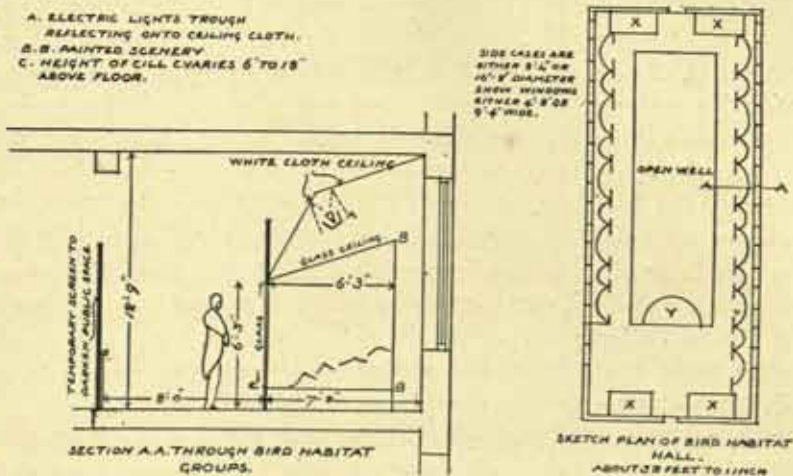


FIG. 21.—AMERICAN MUSEUM OF NATURAL HISTORY, NEW YORK.

A specific instance of the kind of installation complained of may, perhaps, be given—namely, the Morgan Collection of minerals. The main room here is about 165 feet by 64 feet, and is proudly said to contain 15,000 specimens, almost all of which are displayed in desk-cases 18 or 13 feet long, and a few pedestal cases close to the central aisle. Through this room the public passes in the circuit of the museum. Now, I suppose that the examination of mineral specimens in about ten double cases, each 18 feet long, would satisfy the ordinary visitor, and, if he had read the labels and endeavoured to obtain any grip of the subject, leave him sufficiently weary. In this room there are between fifty and sixty cases of varying sizes, and it seems almost positive harm to display them to the public, but, as I noticed that the collection was in course of rearrangement, it is hoped that some selection may be made. The ante-room to this Morgan Collection is more interestingly arranged, but as the room is 54 feet wide and 30 feet long on the line of the main axis of the galleries, and the windows at the sides, it will be realised that there is little chance of effective grouping. The evil is, of course, not confined to America. I find that our own British Museum of Natural History has, in its mineral rooms, 46 double desk cases 12 feet long, besides wall and window cases; while the five Greek vase rooms at the British Museum are a barbaric instance of how a superb collection of beautiful objects may, for the general public, defeat its own ends. The cry against surfeiting and bewildering the public is, of course, an old one; I only dwell upon it here because I had hoped that America, with its extraordinary vitality and newer ideas, would have made greater advance along the line of selection and attractive display.

Again there is confusion as to the entrance: a great flight of steps leads to the main door on the first floor, which is not now used, the public entrance being under the steps, and into a lower entrance hall. The building thus loses in dignity, and there is a sense of confusion on coming later into the upper entrance hall. The lower hall, however, is noteworthy, for I found it, on several days, one of the pleasantest rooms in the building. It is elliptical on plan, and is almost entirely lighted by electric pendants. It has a working model of the solar system hung from the ceiling, and an interesting collection of meteorites, which are lighted by individual electric fittings; while a collection of busts of the museum founders decorate the walls, and the floor has brass inlay of the signs of the Zodiac. The installation here shows that large objects can, with electric light, be well and interestingly displayed in an otherwise unlit room.

The basement of the museum is devoted to stores and workshops, and the top floor entirely given up to workrooms, offices, and reserve collections.

THE NATIONAL MUSEUM, WASHINGTON (Hornblower & Marshall, architects).

The new building for this, which occupies a magnificent site upon The Mall, was not in full working order at the time of my visit in June 1911. The exterior shows that an effort has been made to combine the requirements of the directors as to lighting with a great monumental structure, and the whole is certainly the most successful large scientific museum building that I visited. The simple lines of the design accentuate its great size (561 feet by 365 feet), and the fine white granite used, with a darker base, has an excellent effect against the background of trees. One regrets that the attic treatment on the south front was not carried right round the building, and the portico in some way more attached to the main lines of the design.

The principal entrance on the south or Mall side was required by the Washington Art Commission, but the north entrance, being nearer the town, is and probably always will be, mostly used. Both the architects and the directors regret this, as the use of the north entrance spoils the plan and arrangement of the museum. The floor area is ten acres, and the director

holds that the public portion, roughly five acres, is as large as a museum should be, but that the remaining five acres are insufficient for storage and workrooms.

The three departments of the museum, anthropology, biology, and geology, are represented upon the plan by the three main galleries, which are united in the rotunda.

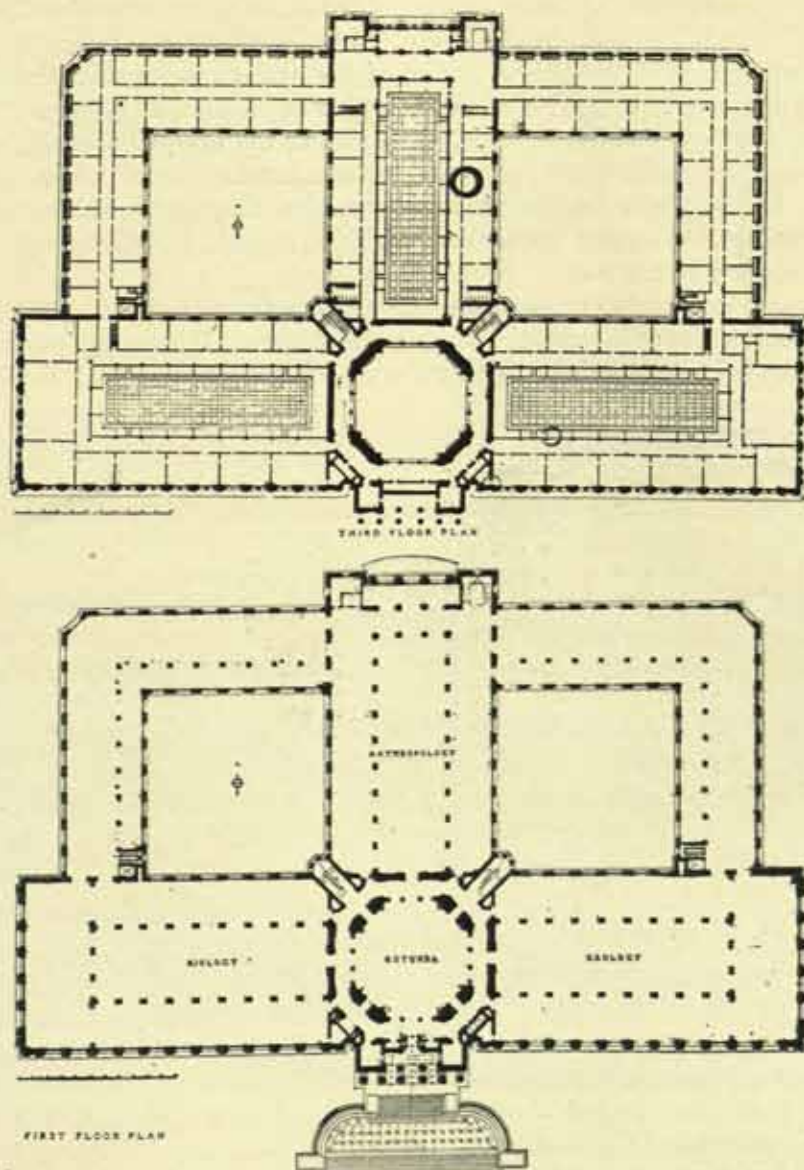


FIG. 22.—NEW NATIONAL MUSEUM, WASHINGTON, D.C.
(Hornblower & Marshall, architects.)

Basement.—Excellent workrooms and offices are provided round the outside of the building; the central portions under the main galleries are used as:—(a) boiler and machinery house; (b) store for specimens in alcohol; while the block on the north and south axis is very ingeniously made use of by placing the excellent lecture theatre, entirely artificially lighted and ventilated, under the rotunda, and two ranges of small meeting rooms facing the courts, with a "salle des pas perdus," which will be chiefly artificially lighted and may contain some exhibits;

between them, the idea being to use the whole of this central block of the basement for scientific conventions or congresses, leaving the main museum free for the public.

The Top Floor is entirely devoted to offices, laboratories, reserve and students' rooms, and some idea of the ever-increasing needs in this respect may be gained by the fact that already (although the museum was not fully open to the public) these rooms seem almost entirely occupied.

The plan and lighting of the public portion of the museum were studied with a view to providing ample light everywhere with as elastic a plan as possible, and therefore the building was left with piers instead of interior walls. The idea of the unequal planning of the north-west and north-east angle halls was to give wide galleries for the general public, and alcoves, or small rooms, on the court side for visitors more specially interested. This arrangement does not seem to be adhered to in the installation, which is spreading itself over the two unequal galleries in a rather haphazard way.

It was, perhaps, too early to judge of the museum as a whole, as the installation of exhibits was incomplete, but, so far as it went, the effect in the side-lighted rooms was unhappy, and the whole seemed over-lighted, especially as many cases are displayed against the light. Almost



FIG. 23.—NATIONAL MUSEUM, WASHINGTON, D.C.: FIRST FLOOR PLAN.

all the vistas end in windows and consequently dazzle the visitor. The glare is somewhat mitigated by ground glass, and sufficient space has been left in the iron sashes for double glazing if this is found necessary to equalise the temperature, but at present this has not been put in. The upper rooms have windows down to the floor, and the effect of these is very bad.

The Rotunda is much more restfully, though amply lighted, but it seemed that the central sky-light might even here have been omitted with advantage and the very fine lighting effect of Mr. McKim's Columbia Library copied.

In view of the excellent results obtained in other museums from specially-lighted group exhibits with backgrounds, it seems a pity that no special provision has been made in the building for the large number of anthropological and zoological groups, which are at present seen to little advantage.

The central hall is at present screened off to provide hanging space for the nucleus of the National Gallery of Art, a separate building for which it is hoped may shortly be built. These canvas-covered screens are 12 feet high and, of course, mar the effect of the museum, although the central galleries thus formed afford excellent exhibition space for pictures, and the light from the high lay-light, reflected and diffused by the white wall above, is excellent.

THE FIELD MUSEUM OF NATURAL HISTORY, CHICAGO (Charles B. Attwood, architect).

The building in which this museum is housed was designed as the temporary Art Department of the World's Fair. It is of plaster and steel framing, and has long since been past repair. The exterior is certainly a most successful piece of classic design, which might well have been preserved in more permanent form. Its plan would appear to have been, in some degree, the prototype of both the Philadelphia and Boston Museums. The interior is, however, devoid of interest, the endless succession of top-lighted rooms being most dreary and depressing. It seems too large for any museum building, and the collection would tire even the most hardened sightseer, although there are many points in the mounting and arrangement of specimens which are of great interest.

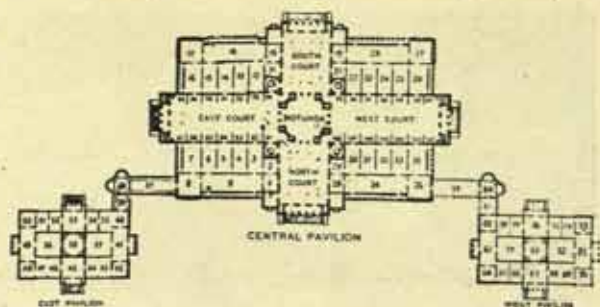


FIG. 24.—FIELD COLUMBIAN MUSEUM, CHICAGO: GROUND FLOOR PLAN.

NEW BUILDING FOR THE FIELD MUSEUM, CHICAGO.

At the time of my visit tenders were being obtained for a new and permanent building, and the plans of this were supplied to me by the architects. It is impossible from these to judge of more than the skeleton of the scheme, though the photographs of the model certainly



FIG. 25.—FIELD COLUMBIAN MUSEUM, CHICAGO: SOUTH FRONT (Charles B. Attwood, architect).

promise an imposing and stately exterior. The main lines are to be upon the gridiron plan, the rectangle being 706 feet by 338 feet, the longer axis being east and west. A great, double-aisled hall, with nave 67 feet wide running up through three stories, bisects the whole from north to south, and four lateral halls 41 feet 7 inches wide join this on each side with the end galleries, which are 48 feet wide. It is not at all clear from the section how the ground floor rooms running east and west are to be lit.

When one thinks of the inadequacy of the lighting of the ground floor passage between the old architectural courts at the Victoria and Albert Museum, which is only 18 feet wide,

one is somewhat amazed to see what appears to be similar lighting, *i.e.* entirely borrowed light from the adjacent top-lighted courts, suggested for halls 41 feet 7 inches wide, and only 21 feet 4 inches high, floor to floor. It would, indeed, be impertinence to offer criticism of a

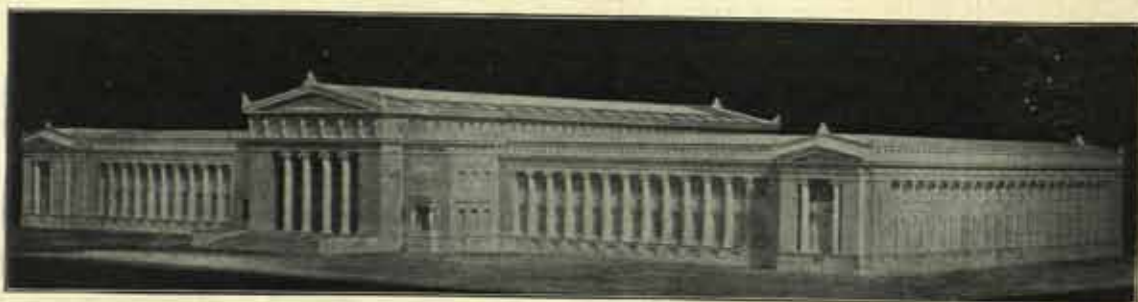


FIG. 26.—NEW FIELD MUSEUM: VIEW OF MODEL.

plan worked out by D. H. Burnham & Co., in conjunction with so great a museum director as J. V. Skiff, but one can only hope that the promise of an intensely monotonous interior will not be realised when the actual building is complete. Frankly, one is appalled by the

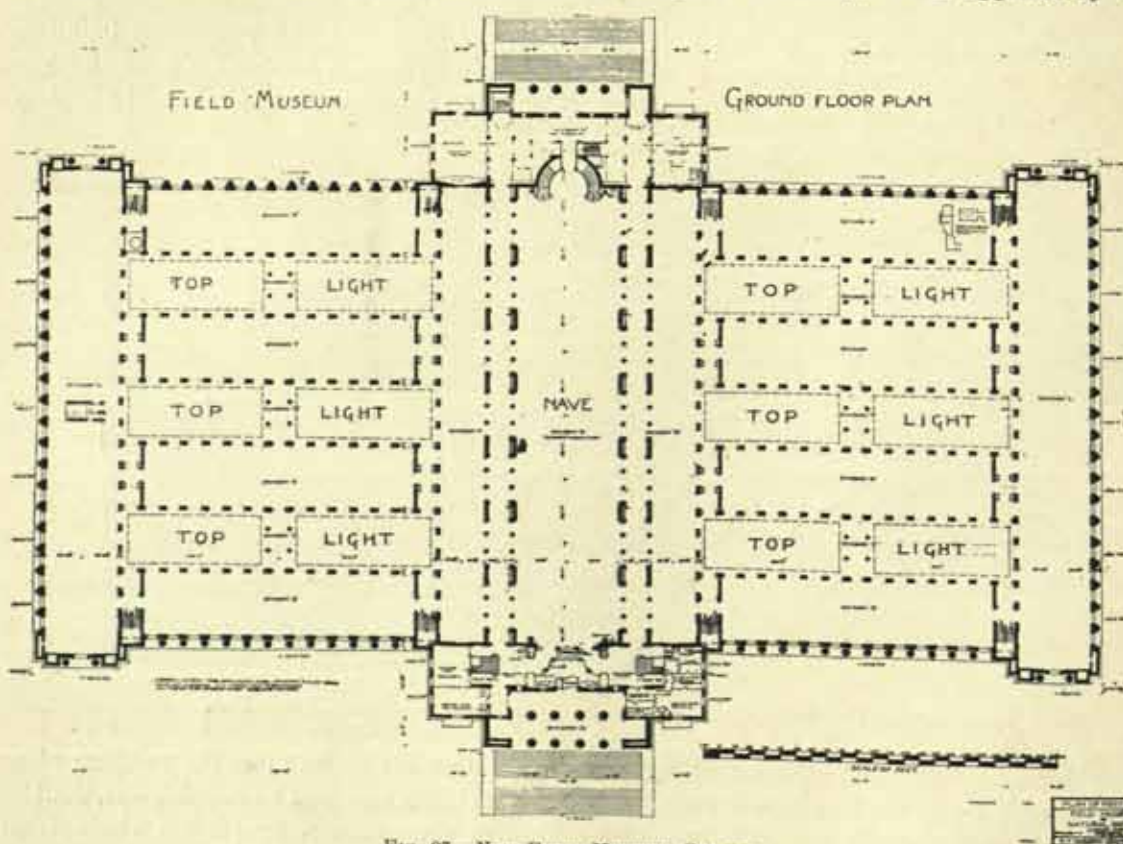


FIG. 27.—NEW FIELD MUSEUM, CHICAGO.
(D. H. Burnham & Co., architects.)

vastness of the floor area which it is apparently proposed to allow the public to wander over, and can only hope that all the internal lateral galleries, on the first floor at least, will by a more merciful generation be closed off for reserve collections.

The second floor is to be given up entirely to workrooms; the basement to workshops, and an auditorium to seat 1,000 persons. The modern American practice is to be followed in so placing this without natural light. The arrangement not only saves valuable lighted space above, but does away with all difficulties as to blinds for screening windows when lanterns are used.

I visited many special museums intended for study collections often belonging to universities. Almost all have been designed rather as small public museums without reference to their particular use. Many have elaborate façades or bombastic approaches, as the Botanical Museum at New York, and have rooms unnecessarily high for the cases they are to contain. Buildings more nearly approaching library stacks seem to be more suitable, either with study rooms adjoining or with their bays utilised for this purpose. One building, the Herbarium at the Arnold Arboretum, Boston, is a successful effort to apply the stack system to a scientific museum. Light is from three sides, and none from the top. There is a well up the centre to allow of supervision and ventilation. The sheet steel cases are 7 feet high upon a hospital skirting and fit tight up to the ceiling and against the external walls, thus forming alcoves, each of which has a work-table and a window so that a student may work at his particular subject without transporting specimens. It has been suggested that collapsible gates should enclose the alcoves so that work might be left on the tables from day to day. The whole arrangement, which is obviously derived from the scholastic libraries, is most workman-like, and the cleanest and most economical of space that I saw; it might well form a model for many scientific museums where the specimens are of approximately uniform size so that a standard case may be used.

Another students' museum, that of the

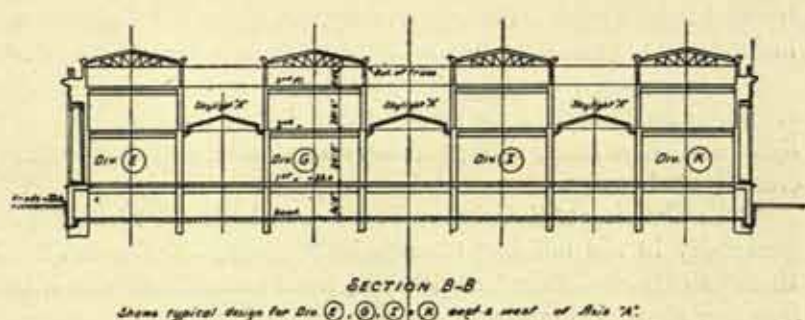


FIG. 28.—NEW FIELD MUSEUM, CHICAGO.

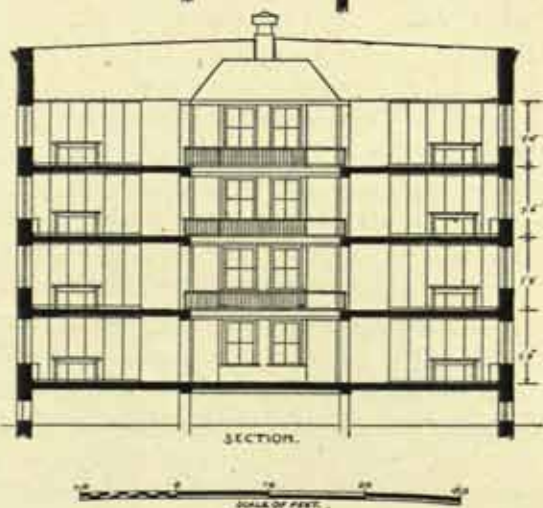
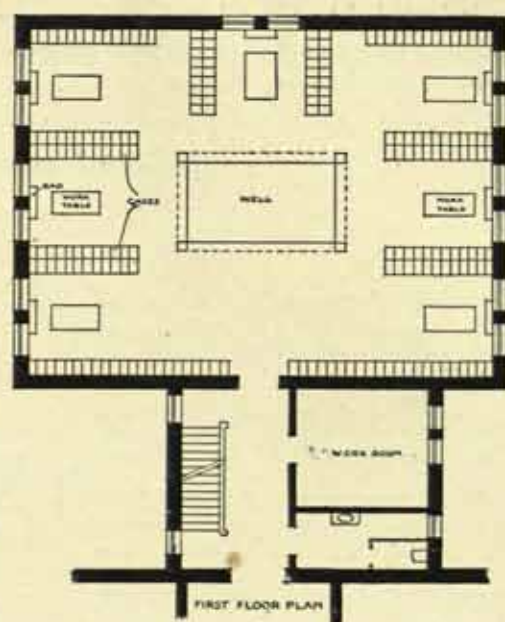


FIG. 29.—HERBARIUM BUILDINGS, ARNOLD ARBORETUM, BOSTON.

Medical School at Harvard University, occupies the upper part of the central administration building of the fine new Medical School group (Shepley, Rutan, & Coolidge, architects).

It is almost a crystal palace, for the whole roof and the gallery floor are of glass, and there are windows on three sides; but for a students' museum there is little objection to an excess of light, and these halls, with galleries, do not seem so tiring to the eyes as the comparatively low cross-lighted rooms.

The planning of the whole school is excellent, and I found in it another example of America's generosity in the building of such institutions. Money is cheerfully given not only to make them as entirely efficient as possible, but to complete them with a fine architectural setting of terraces, steps, and gardens.

AQUARIA.

In England it has scarcely been the custom to reckon Aquaria among museums, although one is included in the scheme of a large general museum now building, but in New York the aquarium forms part of the general museum system, and there seems no reason why they should not be included as departments of most natural history museums: for while it is not possible to carry on serious marine biological work except at seaside stations, it is possible to form, even in

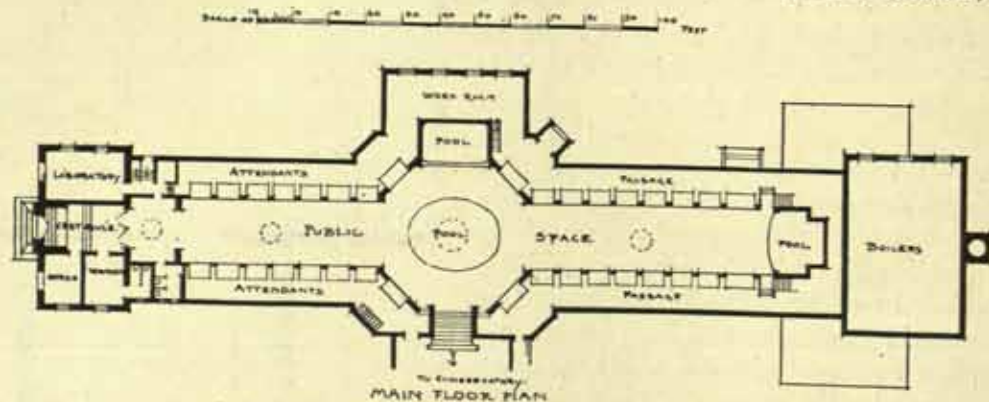


FIG. 30.—DETROIT AQUARIUM (G. D. Mason, architect).

inland towns, such as Detroit, the most interesting collection of salt-water fishes, and maintain them in a healthy condition. Thirty thousand gallons of water were brought from the Atlantic in tanks to Detroit eleven years ago, and this has never been replenished except by the small quantities in which new fish are brought. As to the popularity of aquaria with the public, there can be no question. The aquarium in New York has two million visitors per annum, or more than the total of all the other museums in the city, including the Zoological Gardens. This, no doubt, is due—firstly, to its location at the Battery, namely in a situation akin to, say, the Tower of London, or Westminster Abbey, and secondly, to the superior attraction of animate over inanimate specimens, but also to the very special illumination and method of display that are adopted in aquaria.

At Detroit, a town of only five hundred thousand people, the aquarium has annually upwards of one million visitors, and this notwithstanding the fact that it is more than three miles from the centre of the city. It will be remembered that the visitors to the London Zoological Gardens, last year, for the first time, reached this total; but of course, a charge is made there for admission while the American aquaria are free. These figures should give museum directors seriously to think; and they should ask themselves, especially those in charge of natural history collections, whether methods of display and lighting more akin to those employed in aquaria—for instance, the alcove group system, with overhead lighting—might not add enormously to the

popularity of their collections. Recently visiting two aquaria, the one at Palma, Majorca, the other at Plymouth, England, where the lighting and arrangement of the tanks are not such as we associate with aquaria—that is to say, the tanks are merely placed in big cross- or side-lighted rooms, little effort being made to divert the light from the eyes of the spectator and into, and on to, the water and the fish—I noticed the exhibits were scarcely more interesting than inanimate objects in museums. This confirms my opinion, that the popularity of the American aquaria is due largely to the extraordinary beauty of the exhibits when lighted from above and the comfort in which they can be studied. The public space in aquaria, the officials are agreed, should be only just light enough to allow order to be kept, and pickpockets to be watched; the stronger the light, that can be obtained above the fish tanks, the better.

The New York Aquarium is at present housed in a building erected within the walls of the old Battery, which was not in any way designed for the purpose. The exhibition tanks are on two tiers and follow the lines of the old bastion with passages behind for attendants. The centre is lit from the roof, but the deep galleries over the bottom wall tanks ensure that the public are in shadow, while the tanks are brilliantly lit from above.

The supply, circulation, aeration, and temperature of the water are of primary importance in the management of aquaria, and notes upon these points, obtained from New York and Detroit, are included in my full report. The rebuilding and enlargement of the New York Aquarium has been for some time under consideration, and I am permitted to show to-night a plan and exterior view of the new scheme, which, however, is not yet definitely decided upon. It will be seen that it is proposed to use the walls of the old fort, surmounting them with a colonnade which should form a delightful promenade overlooking the harbour. The old arrangement of two tiers of tanks will be maintained and extended, while the central portion on the upper floors will be devoted to library, lecture theatre, museum, and laboratories. The institution sadly needs a more adequate home, and it is most reassuring to find that it is likely to obtain this, while the wonderful view of New York from the harbour may at the same time gain by the substitution of this dignified colonnaded façade for the sheds which at present crown the Battery.

The Detroit Aquarium is situated in the Park in Belle Isle, about three miles from the centre of the city, and was especially built for its purpose in 1904. It adjoins a large conservatory building, and the boiler-house shown upon the plan serves both. The public portion is one long vaulted gallery, about 140 feet long by 17 feet 8 inches wide, with an octagon in the centre. The only light, except that coming through the tanks, is from three circular sky-lights, that in the centre being about 7 feet, the others 4 feet in diameter. This is said to be ample, and the lighting could not be improved, though more floor-space is required. The walls and vault are of plain green glazed bricks, with marble skirting and string, the floor of terrazzo curved up to skirting. The length of the wall tanks varies 2 feet 9 inches to 7 feet 4 inches, but Mr. Conway, the Director, reports that longer tanks up to even 15 feet are needed, though if made as long as this the glass fronts would have to be divided to withstand the water pressure.

Three floor tanks are provided, but the Director disapproves of them, except possibly for seals, holding that the space they occupy is largely wasted, as they are not attractive to the public, who cannot properly see nor be prevented from feeding the fish in them. The building, generally, is very well suited to its purpose, and may be taken as a model for its size.

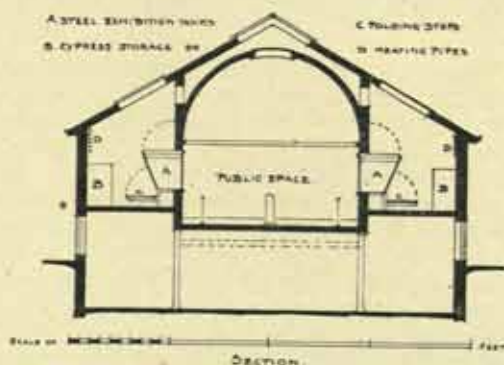


FIG. 51.—DETROIT AQUARIUM.

CANADA.

At the end of my tour I visited Ottawa, Toronto, Montreal, and Quebec in search of museums, and though at Montreal I found a good medical museum at the McGill University and a wonderful little collection of Dutch pictures in a very bad gallery in the same town, yet it seemed that Canada has been too occupied with her development in other ways to give great thought to her museum buildings. Indeed, from what I saw of the new National Museum at Ottawa, not then open to the public, I wished that she had waited still longer before embarking on the project.

Before concluding my paper, I should like to thank most warmly and heartily all, whether architects or museum directors, who showed me such extraordinary kindness on my tour. I can only say to any future Bursars thinking of visiting the United States, that the hospitality and eagerness to assist the visitor will astound those who know only our own frigid methods of receiving such inquiries in this country.

If I may have had occasion to criticise the work of some whom I now count as my personal friends, and many who showed me kindness, I hope that they will believe me that such criticism is offered only in the hope of furthering our common cause—the improvement of museums and their buildings.

To the Council of the R.I.B.A. I offer my sincerest thanks for the honour they did me in appointing me Godwin Bursar.

DISCUSSION.

Mr. REGINALD BLOMFIELD, A.R.A., *President*, in the Chair.

PROFESSOR BERESFORD PITE [F.]: I venture to propose a vote of thanks for this most interesting, important, and valuable Paper. The subject is one of great practical interest, because in these days we all learn by way of museums and galleries, though I am a little doubtful whether the nation at large has yet realised the fact that museums are educational rather than places of amusement. It is obvious to the architect that the fundamental purpose governs the plan. If the museum is a place in which to watch the antics of fish, or the antics of—I was going to say dead birds—we may prepare ourselves for planning in an entirely different manner from the continuous corridor which the evolutionary system of thought demands for any scientific museum. The present scientific habit of looking at the development of all organic matter as a continuous procession towards somewhere seems to settle for ever the plan of any scientific museum: let us have a corridor, starting from nowhere, and leading to somewhere. It is surely apparent that in any scientific study of natural objects nothing but the progressive corridor passing onwards from parent to child will satisfy the normal idea of the plan. The requirements, the conditions of competition, furnished to any architect about to design a complete natural history museum, must be, of course, chronological and encyclopædic, a list of labels, of families with branches, all carefully settled by the director, with every chamber and every spot allocated on those definite scientific principles which are now so

obvious, and which reduce the difficulty of planning a scientific museum to nothing. We have absolutely to follow the family tree, and plan on the branch system. It will be as easy to plan a museum as it will be to plan a cathedral, on the accepted ecclesiastical theory of the parent stem and the branches. But when we pass from the scientific to the art museum we have no theory; we have no evolution; we have no parent stem, branches, or definite system of labels to which each specimen is attached. Here the architect is loose and at large, and the director is so far in a fog; and as a result we realise that in almost every art museum we enter in Europe it seems that the planning of art galleries, though one of the most interesting, is one of the most difficult problems. We cannot speak exactly as we would like about our own museums at home. We should be prejudiced—presumably in their favour, but, I think, more against them—if we set out to compare them with those on the Continent, or those in America which Mr. Brewer has described. But I will only venture to throw out some of the obvious difficulties of the subject in the hope that it may be of use, as this is a discussion of a very practical question. Taking a great general art museum, what lines should guide the architect in planning the portions of the museum to be devoted to architecture? We are at once face to face with a difficulty. Mr. Brewer made it clear in his Paper that he takes objection to the treatment of architectural halls provided for the exhibition of architectural objects; and he pitifully

indicates the terror with which we should view a work of Gothic art put against a modern Gothic background. There is much to be said for that point of view, or for the "packing-case or warehouse system" of design, where all the interest is to be concentrated on the object, and none left for the building itself. But I cannot help feeling that that may be pushed too far, and that such general questions as proportion in height, in length, in width, the general effect of what is over your head, the access of light and treatment of roof and ceiling, are architectural considerations which cannot be banished, and which cannot be dealt with satisfactorily without what one must call detailed architectural style. I think the theory can be pushed too far, and I suggest a warning in addition to Mr. Brewer's pungent suggestion on the evils connected with such a system. But when we pass from the architectural contents of such a museum to furniture and objects of domestic use, I cannot help feeling the importance of considering always the provision of rooms related in scale to the objects which they are to contain. Tapestries hung up in series along a vast unfurnished hall are exhibited in wholly unnatural conditions—conditions which offer to the student, at all events to the art student, the least possible amount of assistance and help. And let us bear in mind that artistic objects, and artistic furniture which is made to charm, ought to be exhibited under more or less charming conditions, and that though I may go to a great shop to buy my carpet, I buy it so that I may exhibit it and enjoy it under very different circumstances than those in which I see it in the warehouse. And I feel that very strongly with regard to smaller objects, how they suffer from the disproportion of the circumstances in which they are exhibited: large awkward cases with huge legs and frames swallow up the charming little works of art which are exhibited within them. The more we can get free, with regard to beautiful objects, of these abnormal and unnatural conditions, I think the better, though at the same time one must exercise restraint with regard to creating an artificial atmosphere which is not, in our sense of the word, modern or natural. In the Bavarian Museum at Munich interiors are furnished in a manner which invites you to believe you are in Madame Tussaud's rather than in a place of serious study. The theatrical and histrionic temptation has not been resisted, and the objects have lost their seriousness of purpose. It does not appear that in America this has "caught on"; though one would have anticipated it. If the American school seems to err, it is in too great seriousness and grandiose character, which is out of keeping with the majority of the art objects. At the same time one is grateful to the modern school of American architects for their attachment to a highly monumental type of classic architecture, practised with great refinement and power. But there is the

sense that they overpower and impart too heavy and massive an effect to buildings which are designed for the exhibition of such charming works of art as we see around the walls of this room,* and the common bijouterie of personal decoration and personal effects. I should like to remind the Institute of the interesting fact that we had M. Billerey's paper the other evening on Modern French Architecture; and this evening has revealed much of what is going on in America. In this old country we are suffering from pessimism very badly in many directions, and though I have listened with great pleasure and profit to Mr. Brewer to-night, I should like to have listened to a paper by an equally gifted American architect on our modern English museums.

DR. WM. EVANS HOYLE, Director of the Welsh National Museum, in seconding the vote of thanks, said: A few years ago I heard an eminent Museum Director, in the course of a Presidential Address about Museums and Museum Work, define architects as "those enemies of the human race." At that time I was disposed to sympathise with him. But since then I have been on one or two Building Committees, and the experience has led me to believe that in cases where the museum does not meet its requirements, the fault lies not so much with the architect as with the Museum Committee. And for this reason: that they do not tell the architect what it is they want, and they do not allow the administrative staff to have any say in the matter at all. How can you expect to get a reasonably successful building if the men who are going to work in it have not intercourse with the architect from the beginning? I believe that most of the complaints which are made about museum buildings are due to the fact that those who have special knowledge of them are not brought into contact with those who are designing the buildings. Therefore, I venture to say to any of you who are called upon to design a museum, "Insist on getting into contact with the people who are going to work in it." Mr. Brewer, very wisely, I think, divided museum visitors into certain classes. There are the people who come to study—specialists who want to compare their specimens, students of colleges and schools who want to see the objects they are reading about; and besides these there are the ordinary public who want to see something interesting and to receive general impressions. The requirements of the student and the specialist are fairly easily met, from the architectural point of view. He wants to have as many specimens as you can let him have, as close at hand as possible, and a table with a good light, where he can work. To the ordinary visitor you must not give too much detail, but every specimen must be perfect of its kind,

* The speaker is alluding to the pictures belonging to the Exhibition of the Women's Art Society now being held in the R.I.B.A. Galleries.—Ed.

must be well selected, must be mounted so that its different characteristics can be adequately seen, and must be labelled in such a way that it will tell its own story and make the visitor understand why it is there and what it teaches. These are some of the preliminary requirements in designing a museum. May I now say a word or two about some of the American museums? I have seen many of those which Mr. Brewer described; many have been built or opened since I was last in America. In the first place, let me say that many of these museums strike me as being altogether too large. I believe that a museum ought not to exceed a certain, rather limited size: for this reason, that when people go to a museum they feel it is their duty to walk all round it, with the result that in the latter half of it, at all events, they see nothing at all, and come away with the well-known museum headache. In fact, from a long experience, I think there are few occupations so fatiguing as museum seeing. Therefore I say the museum should not exceed a certain size, and if the collections outgrow this, you must divide them into sections, and take one section away and put it into a separate building altogether. The American Museum of Natural History I regard as a case in point. It is quite big enough as it is. To see the whole of that Museum involves a good deal of physical exertion, and if it attains the dimensions which Mr. Brewer indicated on the plan, I think the procedure of the average visitor will only result in his being jaded bodily and mentally. Mr. Brewer made some remarks about the Japanese courts at the new Boston Museum of Art, and asked what would be the effect on an educated Japanese of this exhibit. I came across an article not long ago on museums in the East of Asia, and especially on certain museums in Japan. I suppose most of you know that the Japanese method is not to exhibit more than one thing at a time. When a Japanese art connoisseur sees a thing, he likes to examine it very carefully, to take in all its points, and to enjoy it thoroughly. And the consequence is that in the Japanese house there is nothing like a picture gallery; only one picture is put up at a time, one vase, &c. But the Western idea of museums is now getting hold of Japan, and two or three have been built in which Western ideas are being carried out, in some cases with the most disastrous and unsuitable effects. One very wealthy Japanese collector built a museum somewhat on Western lines, but that museum has never been opened, for this reason: that the man would not exhibit to his fellow countrymen anything but the very best, and yet could not bear the idea of putting out his treasures in rows, in cases, to be seen in quantities. The open-air museum is more common in Western Europe than Mr. Brewer seemed to think. It was started in Scandinavia, and I dare say many of you know, or have heard of, the wonderful open-air museum in Stockholm, known as the Skansen, which was due to the genius

of Dr. Arthur Hazelius. It is a kind of park of some seventy acres, and the land is an epitome of the country of Sweden, with rocks and shrubs. Here grow, as far as possible, all the plants found in Sweden, and here are cages in which are exhibited all the animals known to inhabit Sweden. Here are specimens of old churches, old farmhouses, old stables, old milestones, old barns, and everything of that sort. The attendants wear the costume of the province from which they come; and any visitor who goes there in the national costume is admitted free of charge. On certain evenings you can hear the old Swedish fiddle and other ancient musical instruments played, and two or three times a week you can see, on a platform, the old country dance of the land by people in proper antique costumes. I am not altogether in accord with Professor Pite. I do not think evolutionary ideas are so simple as he seems to imagine; because if you start from a primitive point you have branches going off in various directions and at various points which cannot yet be defined; and an outline or sketch for a Science Museum on evolutionary lines would be very largely conjectural. If a museum is to be designed on those principles, it seems to me they are just as applicable to an Art Museum as to a Science Museum, because I suppose there has been evolution in art just as there has been in science. You start with some primitive forms of art, and they develop gradually from one into another, and there is a branching out in different directions. Hence I think that idea, if it is ever carried out, will be as applicable to the one case as to the other.

MR. H. HEATHCOTE STATHAM [F.] asked leave to offer a suggestion with regard to the relation of the architectural treatment of rooms to their contents. Mr. Brewer had raised a very difficult question: what could one do with a large court where it was desired to exhibit architecture? It was right, he thought, to say that if specimens or casts of architecture were to be exhibited in the centre of the court, it was not desirable to have other architecture round the court. And there was the difficulty suggested by Professor Pite: one might go too far in that direction, and come to too bare a room. The difficulty might be solved, he thought, by considering the relations of sculpture and architecture. If a sculpture gallery was being designed as part of the museum, he did not think they need ever be afraid to put a good architectural surrounding to it. Sculpture always gained by an architectural background. So, when making a room for architectural exhibits, why not borrow something from the idea of the sculpture gallery; instead of making an entirely plain room, or instead of putting architectural features round the room, have a plain wall up to a certain point, and carry a bas-relief sculptured frieze round the upper part of it? There would be nothing to conflict with the architecture, and that bare room which was to be deprecated would be avoided.

Also with regard to picture galleries, there was something to be said as to dividing them out by some architectural feature, such as pilasters, and seeing if one could in any way group the pictures. Sometimes a picture collection was so heterogeneous that it could not be grouped, but they could see how it could be done in the New Salon at Paris, where the wall was divided into sections, and, as far as possible, each man's pictures were grouped. If they could, in a picture gallery, manage to group landscapes, or historical pictures, or pictures of special painters, or of a special class of subjects, he thought an architectural division of the room might very well add to the effect. But his chief object in rising was to make the suggestion with regard to the architectural court, because he thought that was the way out of it. He had listened with great pleasure and admiration to Mr. Brewer's Paper. It was an excellent Paper, not only giving much information, but giving it in an exceedingly interesting manner.

Mr. WM. WOODWARD [F.] said he thoroughly endorsed the last words which had fallen from Mr. Statham. Mr. Brewer had given them a most interesting Paper on the galleries of America which those who had not had the opportunity of going to that country must regard with considerable profit. He remembered when a Paper was read in that room some few months ago on Art Museums and Picture Galleries, he ventured to say that in his opinion the best-lighted picture gallery in Europe was the Tate Gallery. He regretted extremely, in connection with that, that their Honorary Secretary had had to announce that evening the untimely death of the architect of that structure, their esteemed Fellow, Mr. Sidney R. J. Smith. He remembered that when he expressed this opinion about the Tate Gallery a gentleman immediately behind him remarked that in his opinion the Tate Gallery was the very worst-lighted gallery he had ever seen. That induced him to be rather diffident in what he had to say on the present occasion. If Professor Beresford Pite would allow his grandiloquent phrases in which they all delighted to be concentrated in the one word "scale," he should be thoroughly in accord with him. For example, in regard to the exhibition of domestic furniture: it was true, as the Professor remarked, that for the exhibition of furniture we ought to have a room in proper scale for such objects; we did not want cathedral-like proportions to exhibit a Chippendale chair or a settee in the French Renaissance style. One of the great faults of our modern museums was this utter disregard of scale. The architect seemed to have forgotten altogether the object of the building he was to design, and appeared to think he was employed to design something magnificent, without any regard to the uses to which the building was to be put. It was a complete waste of money; and not only a waste of money, but it robbed the exhibits of their due

proportions, and of the interest and value that attached to them. He was with the Professor in that direction, and he was sure if architects would devote themselves more to simplicity of design it would be better. One did not necessarily go into a museum to admire the architecture—though he agreed that the architecture should be decent and respectable; we went for the exhibits, and he trusted that that would always be in the architect's mind. With regard to the lighting of galleries, looking at the pictures round the walls,* it was evident that a different form of lighting must be adopted for different pictures. Take, for example, that blazing spectacle of colour to the right of the platform!—could it be conceived that the lighting necessary for the proper exhibition of that picture could be the same as for, say, an Alma-Tadema? [This particular picture is a sort of "Futurist"—"Cubist"—"Impressionist" production!—W.W.] He hoped Mr. Brewer would devote some part of his reply to the points to which he had drawn attention, and would tell them what he considered was the proper lighting of a picture gallery, based upon what he had seen in his journeyings in America.

Mr. FRANCIS HOOPER [F.] said he felt sure the Council must feel highly satisfied with their selection of Mr. Brewer for the Godwin Bursary of 1911, and he was looking forward with much interest to the publication of the complete Paper with the illustrations. Previous speakers had alluded to the question of scale in museums; and the scale in which they had seen them on the screen that evening was such as almost to astonish them when they realised the scale to which they were accustomed in the museums in this country. Dr. Hoyle, in alluding to the fact that there was a reasonable limit of scale, had anticipated the remark which he (the speaker) felt he might venture to put before them, for Mr. Brewer seemed rather to suggest that the museum should be a collection of works which could all be seen at a single visit. At any rate, more than one speaker had alluded to the fatigue one experienced in going through a museum. It occurred to him to suggest, as this Paper would be widely read, that it might be worth considering that museums should be so constructed that people could approach one section and another without passing through other sections; so that a man wishing to study pottery, glass, embroidery, or books, could go directly to them, without his attention being distracted by other extremely interesting subjects. He was speaking rather as a visitor to museums, for such work as designing them had not fallen to his lot. The average visitor entered not knowing definitely what he had come to see, and he looked at what he happened to come across first, and perhaps, as Mr. Brewer suggested, he might not reach at all the subject which specially

* See footnote, p. 399.

interested him. If in museum designing the sections were clearly subdivided off, so that the student went to his particular section without exhausting his strength in looking at other subjects, the problem would be overcome. There was one extremely interesting point about the Paper, namely, that most of the plans shown were only partially completed, and his admiration went out to the American people because they did not look upon their work as having finality; they built as they could afford and left it to others to extend. If that were done at home, we should have less difficulty when our museums required extension, and we should have a more definite scheme upon which the whole was to be carried out. There could be no finality in museums, because collections were constantly being bequeathed to them, and hence the collections were constantly being enlarged, and the range and scope of studies becoming more varied. If the world lasted, our cities would be continually increasing, the visitors would become more numerous, and the objects also more numerous. It did not follow that museum buildings should be multiplied, so much as that they should be extended. The museum at Munich which had been alluded to by Professor Pite was, of all the museums he was familiar with, the most captivating, particularly to architects, because exhibits were arranged in chronological order, and in such pleasant surroundings that it was almost impossible to get tired during the visit.

THE PRESIDENT, in putting the vote of thanks, said that when Mr. Brewer's Paper was printed with its illustrations, it would be found to be a valuable contribution to the literature of this important subject. They appreciated highly Mr. Brewer's ability as a designer; but he also had a quality which designers did not always possess—namely, a fine critical faculty. When he went to America he did not appear to have been bowled over at all; he kept his wits well about him, and observed and noted. And he (the President) noticed a good deal of subaudite—he would not say subacid—criticism in his remarks that evening. He should have liked Mr. Brewer to say just what he thought of some of these buildings. But one could not always do the things one would like on these occasions. Mr. Statham had made an interesting point about a possible combination of architecture and sculpture. He (the President) did not quite follow him, because he suggested that sculpture might be treated as a frieze with a fine architectural setting, and he did not grasp whether the sculpture contemplated was old sculpture or modern sculpture; because if it was old sculpture, the architect would have to cut down his architecture to fit it. [Mr. STATHAM: I referred to modern.] That disposed of that point, then. They had had some very shrewd remarks from their old friend Mr. Woodward, whose commonsense and

humour were one of the bright lights of the Institute. He drew attention to what was certainly a remarkable picture, and asked pertinently how it was possible to light in the same gallery that picture and one by Alma-Tadema or some other artist with the same finish. And there he touched on a point of very great importance as affecting the whole question of museums, viz. scale in relation to exhibits. Mr. Brewer had spoken of a museum with a floor space of ten acres, but Dr. Hoyle had made him jump in his chair when he talked of an open-air museum of sixty acres, and persons in antique costumes jumping about and playing ancient instruments! There was some valuable and suggestive criticism in Professor Pite's remarks on this question of scale. That was one of the difficult problems with reference to museums; clearly, what would suit one object would not suit another. And the question of environment again came in; perhaps the safest thing to do was not exactly to cut the knot, but to evade it. The dominating question in museums was this question of scale, especially when it came to attempting to exhibit architecture. Much harm had been done by the attempt to subject architecture to museum exhibition, and he was opposed to it because he thought it was impossible to do it. We had some flagrant instances of it in our own museums: a Trajan column, for instance, put in a big room, with totally incongruous surroundings in environment and in suggestion. There were many things which could be exhibited in museums, and it should be recognised also that there were things which were incapable of proper exhibition there. The sooner we realised that fact, and eliminated this large area of matter, the sooner would museums become more intelligent in their management, and more intelligible. A very interesting point cropped up *a propos* of the photographs of the buildings Mr. Brewer had shown them. It was curious and significant that the Americans, who, to all intents and purposes, were not a people with an old tradition compared with ourselves or other European nations, were most diligent in their search for traditional types, and in one of the plans and sections shown he recognised the old friends from the Vitruvius Britannicus. And on the other hand the Germans, who were an old people, though not an old nation, were turning their backs resolutely on the whole tradition. He merely put it to them as a strange result of modern development; he was not offering an opinion upon it. He joined heartily in the thanks to Mr. Brewer. He had made excellent use of the Godwin Bursary, and they would welcome, and value highly, the Paper he had read.

MR. BREWER, in reply, said that there had been some confusion as to his meaning with regard to architectural courts. He was referring to those intended for the largest objects, such as whole

sections of buildings, fronts of houses, &c. Undoubtedly, the proper place for these was out of doors, but if this was impossible, then the largest and simplest halls were required, probably with plain iron and glass roofs, with velaria under, and these halls should be as far as possible from the ordinary galleries so as not to destroy the scale of the normal exhibits. This brought them to the question of scale generally which had been touched on by several of the speakers; undoubtedly the ideal would be to have each room designed in scale with the objects it was to house, but unfortunately there was no finality in museum work, and if a room was intended for furniture some enthusiast in after years might endeavour to put a whale in it; he believed that it was therefore best, unless one was housing a definite and complete collection, to aim at a moderate intermediate scale, and keep the building as simple as possible. At the same time he was not, as one speaker seemed to think, an advocate of the "packing-case room"; indeed, he had shown the view of the Boston Greek Vase Room as an object lesson to be avoided. Several speakers, again, appeared to think that he was not in favour of what he had called stylistic settings, such as the Japanese rooms; whereas he had expressed his delight at these rooms, but had said that such treatment should be very sparingly and carefully employed, and that suggestive rather than facsimile backgrounds should be aimed at. Professor Pite's remarks had made him realise the danger of writing a long Paper and then reading only part of it, for apparently he had said only the unimportant and omitted the important things. It was not true that he was averse to the simple circuit plan, which seemed to him preferable—especially if combined with side rooms for the more interested visitors and for reserve—to the department plan at Boston. The four days he had spent in that museum convinced him that, although the idea was excellent, in practice it led to confusion. The elaborate circuit plans provided did not prevent one from "short-circuiting," and once through the wrong door one got interested in the new department and hopelessly lost. Professor Pite's scheme for a scientific museum planned on the theory of evolution sounded delightfully simple, but he quite agreed with Dr. Hoyle that it would be quite unworkable in practice, though he would much like to see Professor Pite's attempt at such a design.

L.C.C. Art Scholarships.—The London County Council are awarding a large number of art scholarships and exhibitions designed to enable students and artisans to obtain instruction in art and artistic crafts at approved schools or classes. Each scholarship will consist of free education, together with a maintenance grant, if the Council thinks fit, not exceeding £50 per annum. Full particulars are given in the *L.C.C. Scholarships and Training of Teachers Handbook*, 1913 [P. S. King & Son, Great Smith Street, Westminster].

THE STUDY OF ARCHITECTURE.

By Sir ERNEST GEORGE, A.R.A. [F.].

Address to the R.A. Students, 6th March 1913.

WHEN I was honoured by an invitation to lecture on Architecture I came to realise, and at once to confess, that I possessed no exceptional or expert knowledge upon any one of the numerous subjects to which we have all given our time and thought. I do not claim to solve any difficult problem, or to add to the historical or archaeological knowledge of our art. My remarks and suggestions are made to you students before me—you who, with your sound training and in the freshness of your scholarship, are some of you as well informed as your elders. The latter, however, can boast an experience which is not yours, and a long experience is my excuse for offering advice.

My theme is the study of Architecture, and by this I mean the study of buildings existing around us; monuments that the ages have left to us as a precious heritage, the best traditions of which it will be yours to carry on. I do not ignore the wealth we possess in books, from Vitruvius to the time of our own gifted writers, upon our art, but of that wide subject I am not now treating.

The study of all that has been nobly built is the soundest preparation for the future builder or architect. A knowledge of material and its right uses is equally important, showing how form is the outcome of material fitly applied. We have seen mud walls (generally battered) that were not without dignity; and, where forests abounded and timber was the material to hand, our mediæval cities made a fair show with overhanging stories and carved and moulded beams. The Hansa towns with their guildhalls, lofty churches, and fantastic stepped and shaped gables owe much of their character to their brick construction, as do the Lombard and Venetian churches. The columned and trabeated temples of the Egyptians, Greeks, and Romans are the outcome of stone and marble construction as posts and lintels. When these forms are in general acceptance their origin is too often forgotten, and we find Palladio content to have columns with a brick core and plaster surface. We find the like at Pompeii, but that was professedly cheap work—a pleasure resort, quickly built.

Of the student's acquirements the art of drawing is of primary importance. The pencil should express the suggestions of the mind, but the hand must not obtain such fluency as to outrun the brain. Nor must the drawing become of that pretty kind which is attractive in itself, independently of the composition it would set forth. Bad design is sometimes disguised under the cloak of attractive drawing. Geometrical drawing and the recording of detail in the study of the great works of the past will always remain the most

useful effort of the student. To draw and to measure mouldings and details that appeal to you as perfectly satisfactory on some monumental building, is to take a lesson direct from a great Past Master, and by such records is learned the method of obtaining light, shadow, breadth, proportion, and all the qualities that constitute fine architecture. While usefully occupied in such study of detail, you must carefully note the relation of the parts to the mass and to the scale of the building. We have seen students' studies that were a treasure-house of interesting detail, but without evidence of the position and relation of the matter illustrated.

When a free handling of the pencil or brush is acquired, sketching is a fascinating occupation, pleasantly employing the mind without putting a strain upon it; but there is the temptation to turn from the serious and careful contemplation and recording of a building to this lighter use of the hand. It has been a matter of conscience with me not to encourage water-colour sketching by the student architect, knowing its seductive tendencies; nevertheless, much is to be learned by considering a building in relation to its surroundings, as in a pictorial drawing, acquiring thereby a sense of grouping and the values of colour; but such sketching must not trespass on the hours of serious study, it should be a recreation, and enjoyed as such to the full.

To get through your allotted work you have to specialise and limit the number of your interests, giving your mind to one earnest pursuit, avoiding distracting influences. When all is done, your attainments will not exceed your needs as accomplished architects, for you are probably ordinary mortals. We have the record of a giant architect who was at the same time a great painter and sculptor, who also found time to write tender sonnets; but in arranging our curriculum it is best to assume that our coming architects are not all endowed with these versatile powers. That they should be able to model as well as to paint will be to their advantage.

When speaking of colour, how little is that quality generally considered by the average architect, to whom forms or lines seem all sufficient. Perhaps greater purity of form is demanded where colour is absent, for we sometimes find a lack of design and proportion where walls have been regarded first as a field for decoration, as in many frescoed churches. The nave of the famous Duomo of Florence is a conspicuous example, the length being occupied by four ungainly arches where it might have had more, the somewhat shapeless spaces of wall being destined to the glories of colour. Its architecture might have passed unquestioned under the glamour of frescoes by Perugino or Ghirlandaio.

In the earlier churches of the Romanesque, where colour is a dominant feature (as in the various Basilica of Ravenna), there is an ordered plan

of decoration, determined by architect and painter working in unison, the Procession of Saints and Martyrs contributing a splendid frieze to an architectural composition, in which colour is not less important than form, and in which walls have been kept flat for colour. The picking out in colour of mouldings in cornices, even when done by true artists, as in Greece, seems to me unsatisfactory and disturbing, upsetting the proportions.

The conditions under which we live are against the attainment of breadth, simplicity, and general conformity. Every material is to hand, and every mode of building that has prevailed in the past is known to us in all its detail and set forth in our architectural text-books, or may be found in our own jottings of travel. May we not unload our minds of some of this cosmopolitan knowledge of facts that are too many for us?

Those who raised the buildings that claim our admiration were, in each period and in each country, working with a common purpose in a style to which we now give a name and a date, and the work was progressive in its development. Those who were occupied with the "Perpendicular" or "Flamboyant" had fine examples beside them of the "Romanesque" and the "Early Pointed," but it did not occur to them to hark back upon these. Nor did they say an ecclesiastical building must be in one style and a civic building in another; they were saved from the jumble that is presented now as the collective result of our later efforts, our architects having chosen for themselves the "style" that suited their idiosyncrasies. The fifty years that I have played my humble part have probably been the most marked by diversities of purpose. We would remember henceforth that *style* is the result of good design, from an artist's hand.

When I was a pupil the enthusiastic writings of John Ruskin were an awakening influence; they opened the eyes of many to seek and to see what was beautiful. Unfortunately, Ruskin, with all his genius, had no sound knowledge of architecture, on which his outlook was prejudiced and narrow. He was instrumental in upsetting all that was left of our national building traditions, and at his bidding we enthusiasts went out to gather and assimilate "brick and marble" architecture and mediævalism in France, Germany, or Flanders, setting most store on things un-English. When this acquired knowledge came to be applied at home a picturesque quality was sometimes attained, but harmony and restraint were not accounted of. The change was accepted as a reaction from the dull and generally mean work of the earlier Victorian epoch.

France had her periods of marked change following one another rapidly, and each with its definite character. What we know as "Louis XII." was succeeded by "Francis I.," that again by "Henri IV.," "Louis XIII.," and "Louis XIV.," all with their strongly marked features. These were the

result of *growth* under the hands of enthusiastic artists and cunning craftsmen, working together in the development of their art, and the work was a virile expression of their minds. The changes from which we have suffered in the last seventy years, and which have driven away any traditions that were left, have been capricious changes—perhaps the copying of some foreign type or the revival of some early period; a transplantation that had no root or power of fruit-bearing.

To draw, to sketch, and to fill note-books used to be regarded as evidence of the earnest student, and I may say that the best among us pursued this course; I have seen no more beautiful or versatile sketching than that of the great architect lately removed from us.

The object of seeing is to absorb what is seen (always with careful selection), and it is for you each individually to decide how you may best retain the impression of fine architecture. Some by a mental process may be able to sit before a building, study its proportions and parts, giving them a place in the memory; while the majority will find the necessity to draw and to measure accurately the work of the Masters from whom they would learn. A great painter has said that in art there is everything to learn and little to be taught, and it is certain that what you learn for yourselves is worth more than all that others can put into you. We believe we know what we want now, and there is a purpose, at least in the Schools, to work on accepted lines, avoiding importations and exotics with their sensational and self-asserting notes, often discordant. Do not let vanity lead you into that which may look clever, while it is of ephemeral interest and antagonistic to its environment. Let not Fashion, which rules in dress, have her mischievous influence on our art, demanding ever the new and the startling.

It is for us to lead and not to be led by the chance wave of popular fancy. We must be deaf to the clamour for new art and a new style of architecture; our aim must be for continual progress and an increase of knowledge and power of design, raising the standard of our work, and leaving no handle for a revolutionary crusade. Continuity is wanted, and no more uprootings and transplantings if there is to be a goodly growth. This knowledge of what is right and fitting should be shared by our craftsmen who would use their minds again and know what mouldings would be suitable though they had not an architect's full-size detail to follow. Working thus on recognised principles and with self-imposed limitations, we may give to our century a character and place in the history of architecture, for the story of the human race and its wanderings has till of late been clearly written in its buildings.

You who are here realise fully that a solid grounding at home and the cultivation of judgment and the critical faculty are necessary before you can profitably go out to choose for yourselves

the models and objects for study. The embryo architect is privileged in having a really good claim for a period of travel; a time delightful in the realisation, good to look forward to, and a pleasure to look back upon in after life. Polonius says, "Home-keeping youth have ever homely wit," and it is good for all of you who can do so to go out and see the world before settling down to your place in it. You will give your minds first to such examples of architecture as seem akin to our own needs and ways, such as will show you how the latter may be nobly treated.

With the founding of our British School of Rome the pick of our coming men will have the privilege of residence in that inspiring city, with leisure for thoughtful study, and with fellow artists, sculptors and painters, as their comrades, and I can think of no conditions of life so helpful and inspiring. It is hoped that in the future these our prizemen who have made monumental buildings their special study will be recognised by our Government, and will be entrusted to design official buildings that have too frequently been left to the permanent Surveyor of Departments.

The art of Greece, as found at home and in her Colonies, will claim an early place in your studies. It were good for you to acquire intimacy with the subtleties of work, so apparently simple, from the hands of consummate artists. In France, in Spain, and in Northern Europe you will see the walls and towers of feudal times, and will visit Gothic shrines with their soaring shafts, arches and intricate vaultings showing the knowledge possessed in the "Dark Ages" and expressing the religious fervour of the time, these ranking among the greatest achievements of science in building. You will see cities that have been laid out with stately symmetry, their dignity and studied composition depending on long horizontal lines and calculated balance. In other towns your enthusiasm will be stirred, where clustering towers are crowded upon by tall houses with steep roofs and gables in arcaded streets, forming pictures at every turn. You will realise how many moods art has in her repertoire; there is no recipe for securing beauty, it must be of you and in you. You will note with interest how each country seized, engrafted, and assimilated in its own way the revival of Classic art which was spreading from Italy. We in England were fortunate in having strong men to receive, adapt, and develop the new spirit, throwing their individuality into the manner, their phase of the revived style becoming a national type not less characteristic than that of France or of other lands.

All the scenes of travel will be full of suggestion to you. Is there not a danger of seeing too much and too many sorts? Yet among these you will be able to decide where is the strongest appeal to you personally; in what method you will most happily work in the future.

The pleasant period of travel should not be extended too long or after the freshness and enthusi-

asm has ebbed. The "Prix de Rome" man sets himself some definite work to occupy his two or three years away; but in ordinary cases there is the risk of the student becoming the mere archaeologist or dilettante, perhaps returning to find the practical duties of an architect's office irksome. It is not a necessity now to make the Grand Tour. Travelling is easy and rapid, and the busy man may get his impressions of France, Italy, or Holland in separate spells as the spirit leads him.

Having just revisited Egypt I would commend to those who have leisure and the opportunity a pilgrimage to the great monuments of that strange land, broadly speaking the earliest and among the grandest examples of man's efforts at building. These archaic works are immensely impressive. In the temples the ranges of mighty columns are just so far apart as to carry the stone lintels (monoliths) that span them, forming roof and ceiling. There is mystery and majesty in these great pillared halls (pillars sometimes nine feet in diameter) to which the lavish and unstinted use of material contributes, as does the simplicity of construction, the whole being of stone.

It may be discouraging to know that the earliest of these builders, men of almost prehistoric times, had a finer sense of art than those who followed by two thousand years; perhaps the degeneracy was the inevitable result of repetition and imitation, as also of the upset of dynasties. An argument for visiting the Egyptian monuments is that many of these are to be really seen now in their completeness, not, as with other early work, by a mental process of reconstruction from fragments and vestiges. The lines of the purest examples are studied and refined though they have their origin in a phase of thought wholly differing from our own. Repose is the element most valued; it is dominant in the sculpture of Lion, Sphinx, or Man, the latter being seated with hands on knees, or if standing it is with one foot advanced and with the arms folded or at the sides, never in action.

A characteristic of Egyptian work is its permanence. It is strange that for two thousand years the Temple should practically have followed one plan, its entrance placed between mighty pylons leading to an outer court; a colonnaded court generally came between this and the hypostyle hall with its multitude of columns; those of the central nave or aisle rising above the rest, as in a cathedral. Beyond this the sanctuary and mysterious chambers, passages and stairs to the priests' quarters, the whole group being enclosed by a high wall, the walls having over them pictures and splendidly decorative writing incised, and at some periods with modelling within the incised outlines. This enrichment is so judiciously spread over the surface as to give richness and texture to the walls without a loss of breadth. Upon the same plan did Greeks and Romans when in occupation build temples in Egypt. There were changes only of detail and of decoration,

in periods when art was at a high level, or when it had ebbed and become mechanical. No rain falls to wear or fret the stones, on which the writings are as fresh now as when they left the chisel.

Of colour decoration the early Egyptians were masters, and wonder is excited by the wealth of drawing and of colour on the walls of sepulchres that were to be sealed up and to be enjoyed only by their silent occupants. In his search for the Beautiful the student in Egypt will find a feast in the splendid mosques of Cairo. The treatment of domes, the gathering in with stalactite corbelling and the bold use of colour, with the fine instinct of the Oriental, will be a profitable study.

Leaving the mosques and bazaars we find a new city of Cairo. Under the British occupation the old order changes and there has been a mushroom growth of official, commercial, and residential building spreading into the desert. While we have been talking at home of "Town Planning" we have been missing a fine opportunity in this great city that is under our care. With few exceptions the buildings are mean and wanting in beauty or distinction. They are the result of financial enterprise without an artist's control or guidance.

This is perhaps a digression, but I am led to speak of the latest impressions I have received. I am not advising that Egypt should be generally included in the lands carefully selected for the architect's educational travel. When time and means allow of a wide outlook, inspiration will be found in contemplating all good modes and types of building that have made the world beautiful and have met the requirements of other times and countries. Look on these as pages in the long history of architectural expression; the spirit that gave them birth should be yours, but do not regard all as suitable subjects for revival and resuscitation. We cannot put the clock back and people our buildings with primitive man. The romance of early days makes a strong appeal to us, but the superfluity of comforts and conveniences that are part of our complicated civilisation are incompatible with mediævalism. There is no returning to sanded or rush-strewn floors, nor must we visit a well when water is wanted. We must accept whatever is good of modern invention, and it will influence and shape our architecture. The diversity of our modern wants and the variety of materials in use, together with the new methods of construction, will supply us with changes enough to call out the personal and individual character that should inspire all good work.

We have talked of foreign travel, and there is interest and excitement in meeting new scenes, hearing strange tongues, and adopting changed modes of life. On the Continent you may find a climate more favourable to outdoor work than our own humid island, but in the latter will be found subject-matter enough for the most exacting seeker. No other country possesses so many beautiful houses with the essential character of

homes—less stately perhaps than some of the palaces of our neighbours, but we have been spared from the revolutionary wreck that has denuded so many foreign chateaux of their treasures. Through Tudor and Georgian periods noble houses have grown up throughout our land, those of each county having their individual characteristics. These will reward the reverent study and contemplation of those who are not restless for wider change.

A new capital for our Indian Empire is the most important architectural enterprise of our time. The result will represent what the ruling race is capable of, and will demonstrate the status of our art. Able men have been chosen to initiate this great work, and it is of intense interest to know how it will be treated. The plans of the city and the schemes of its buildings must be British, but we are told that there exist good traditions of building with the native craftsmen. If so, we would not wish the latter tied down in all particulars to an exact following of details made by an architect's staff. The army of artificers will have more joy in their work and will do it better if allowed some freedom and invention, especially in its decorative execution. Probably they will be given some play for their beautiful *Pietra dura*, instead of repeating "egg-and-tongue" and "bead-and-reel" enrichments.

I do not believe in "Oriental" design from European hands; we find such work just missing the refinements and qualities on which its charm depends. An attempt to revive an Indian character of design would result in failure, at the same time failing to represent the spirit of our age. A city is not built in a day, and I trust that some of you will be contributing your best to this creation of our twentieth century; it will form a landmark in the progress of Architecture.

Looking back on the past I could wish that I had enjoyed the training that you are receiving. In my day there was no Royal Academy School of Architecture; we have one now with vitality and promise. The solid grounding that you are getting is already bearing good results, as judged by the work you have shown lately, especially in the Medal Competitions. Good training is a fine foundation, but while all taught rules are carefully observed, unless inspiration, imagination, and the personal element come in, your work will be dull and lifeless. To a student George Frederick Watts wrote: "The mere mechanical difficulties are always to be overcome by the means of judicious and continual practice. The elements of the Beautiful and the Elevated are the real difficulties. Master them, and fill the mind with what is great; the hand may tremble, but it must obey the impulse. It is not the knowledge of proportion, it is not the knowledge of the rules of poetry, that will make the Pheidias or the Homer."

REVIEWS.

COLOUR DECORATION.

The Art of Colour Decoration. By John D. Crace, F.S.A. (Hon.A.). 40. Lond. 1913. Price 30s. net. [B. T. Batsford, 94 High Holborn, W.C.]

The salient features of this book are the charm of its illustrations and the sympathy of the author with the architect's standpoint in decoration. The illustrations (chiefly from Mr. Crace's studies in Italy) are beautifully reproduced, and are in themselves more educative than acres of written precepts. The author's precepts are, however, apparently the result of a ripe experience; they are most interesting, and I have already found quite practical and useful. There is in the book nothing about the subtle teaching of the ordered tints of the rainbow, no talk of primary and secondary colours, no *ex cathedra* statements as to which should go with which—there is frank admission that in such matters it is the spirit which quickeneth. Mr. Crace is, as I have said, much in sympathy with the architect's standpoint, and insists, with a wealth of example and illustration, that the work of the decorator should be in harmony with the spirit of the building, and that his colouring should emphasize its construction.

Possibly some of us may have had gleams of a similar idea, and in attempting to practise it have fallen into the pit of over-emphasis: we have made our line of ordered pilasters sing too loudly in the wall's harmony. Here Mr. Crace is most helpful. He says:

"As a rule it is desirable to carry through the spaces a little of the same colour which has been used to define the main structure, using it to define or suggest the subordinate structural arrangement which such surfaces will either possess or require." Again: "The Italians when painting some subject in the vaulted roof of a building would assist [or modify] 'the rib of the vaulting by a clearly defined border.'"

Throughout the book is practical. One learns that the repetition of a decorative feature in a different colour but of the same "value" destroys a dull uniformity without disturbing an essential unity; that timid gilding in thin lines weakens expression; that a flat ceiling has a tendency in appearance to sag, and that the strongest colour should be concentrated at its borders; that modulation of colour, the making of it darker or lighter without losing its quality, may be attained by placing another colour or gilt over the ground in the form of a diaper or pattern; that all colours on a ceiling appear much darker than they do on a palette.

The book gives one to think, and sometimes to question. We read thus:—

"It cannot be too often repeated that in Architecture the instinct which demands stability—i.e. structural expression—must be satisfied before the spectator's mind is in a condition to derive coherent delight from any decorative beauty; therefore the pictorial decoration which

floats in undefined space upon a surface of unknown contour is seen under conditions which keep the mind restless and dissatisfied."

And we remember churches in the South where we have realised no "contour," nothing but a haze of golden light, with suggestions of coloured forms and points of silver breaking through the lower gloom: all as vague as incense smoke—yet leaving us neither "restless" nor "dissatisfied."

And are not some buildings best left alone? Were they not designed by the architect without any thought of later colourists? Was not St. Paul's one? At any rate, can we agree when its decoration is given as an instance of sympathetic treatment, "a great and noble work which does justice to an architectural masterpiece"?

And can one altogether agree with this, of the much-abused easel picture?—

"No picture is by itself decorative. . . . There must be some border or margin so treated that the colouring of the picture is not abruptly separated altogether from that of its surroundings. To produce a truly decorative result, care must be taken that the eye may pass readily beyond the confines of the picture."

Think of two walls, one covered with imaginings by Botticelli, fair women and trees, with pilasters sufficiently pronounced, on to which have, perhaps, strayed leaves and flowers from the woods, a scheme of colour with "modulation," "recalls," "accentuation"; and of another all white, with three great balanced portraits by Van Dyck framed in gold between the columns—is not the last wall just as decorative as the first? Might not some quite architecturally minded souls desire to live under its shelter ever more? But these are matters of taste, and our questionings are only aroused by the lucidness of Mr. Crace's style, obscurity being the only thing which provokes no criticism.

But what of teaching such as this in the chapter on "Imitations"?

"The decorator has in the imitation of marble *when suitably used* a device of very definite value." "A plaster column is in itself unreal." "In such a case it is difficult to see why such concealment should not be itself dealt with imitatively."

One remembers the painted granite of the pilasters responding to the real granite of the columns in the Fitzwilliam Museum at Cambridge, and meditates; and through his meditation comes a voice solemn and sonorous, though, perchance, old-fashioned:—"Those grey arches and quiet aisles under which the sheep of our valleys feed and rest on the turf that has buried their altars; those shapeless heaps, that are not of the earth, which lift our fields into strange and sudden banks of flowers, and stay our mountain streams with stones that are not their own, have other thoughts to ask from us than those of mourning for the rage that despoiled, or the fear that forsook them. It was not the robber, not the fanatic, not the blasphemer, who sealed the destruction that they had wrought; the war, the wrath, the terror, might have worked their worst, and the strong walls

would have risen, and the slight pillars have started again from under the hand of the destroyer. But they could not rise out of the ruins of their own violated truth."

In all seriousness, supermen have done and may continue to do such things; but should they be preached to the babes and sucklings of art into whose hands this excellent book may (and will, I hope) fall? HERBERT G. IBERSON [F.].

REINFORCED CONCRETE.

Reinforced Concrete Construction, Advanced Course. By M. T. Cantell. 80. Lond. 1912. Price 12s. 6d. net. [C. & F. N. Spon, Ltd., 57 Haymarket.]

The present issue is intended as a sequel to the author's elementary course published in 1911, and contains 243 illustrations, including seven folding plates. The practicability of the treatise is seen by the presentation of thirty-one examples fully worked out, dealing with types of structure in which reinforced concrete is generally employed. The ultimate resistance of concrete is averaged to consist of 2,400 lbs. per square inch, and it is shown that if steel reinforcement is stressed to its limit the concrete may be overstressed; while, on the other hand, if the concrete is stressed to its limit, the steel may be understressed and the amount of reinforcement be in excess. Judgment is therefore needed so to proportion the steel to the concrete that their combined efficiency may be satisfactory. Compressive bars may be introduced, but heavy bars or rolled joists buried in concrete do not form what is known as "reinforced concrete." The author states that "too much stress cannot be laid on the necessity of constant expert supervision." It is not sufficient (he adds) to give the workmen special instructions with regard to the mixing and placing and then to inspect the work periodically, as the author has found from practical experience that no matter how good the workmen may be, without constant supervision the best possible result cannot be depended upon. With reinforced concrete works, it must always be borne in mind that a good specification is practically useless unless first-class workmanship is secured. The book deals with columns, piles, walls, retaining-walls, strong-rooms, stairs, roof construction, water-tanks and reservoirs, main sewers and conduits, bunkers, bins, tiles, chimneys, arches, bridges, buildings and foundations, and provides a complete index whereby reference is facilitated.

A. T. WALMSLEY, M.Inst.C.E. [Hon.A.].

WHITE LEAD IN PAINTING.

Mr. Noel Heaton is one of those scientific chemists who have made a special study of painters' materials both ancient and modern, and not only of the materials but of the methods of using them. Like Professor Church, he has done

this in sympathy with the artistic results, as well as with regard to the commercial and economic importance of the subject, and has kept his mind free from interested prejudice.

Therefore in the Paper which he read before the Royal Society of Arts on 12th March we have a very valuable statement of the many facts connected with the manufacture and use of white lead, so far as they can be summarised in a lecture, with sufficient detail to give his hearers or readers a very clear idea of the various methods of manufacture, as well as of the purposes which it fulfils.

More than this, he shows its commercial importance, and the immense number of people engaged directly and indirectly in its production, and combats very effectively the exaggerations and distortions of evidence which have lately been so persistently urged against its use in painting.

At the beginning of his Paper he announces this to be its object, and says that he considers "that it (white lead) possesses qualities which render it of exceptional service to the painter, and which far outweigh the disadvantages attendant upon its use." He further expresses the conviction "that any interference with the use of white lead would be a disastrous mistake."

In the Paper, as printed in the *Society of Arts Journal*, Mr. Heaton gives some interesting tables, on pages 464-465, which show in concise form the number of cases of lead poisoning—first, of those engaged in the manufacture of white lead and its use in painting, as compared with such cases in all industries; and secondly, of the mean annual death-rate of painters and plumbers, as compared with that in all industrial occupations. These last he tabulates at all ages from fifteen to sixty-four at intervals of ten years. In view of the alarming outcries of those interested in substitutes, it is reassuring to find that the painters and plumbers, at all ages, appear on the favourable side.

For the whole year 1911 (in which the number was higher than in 1910), the total cases reported—makers and painters included—was 235, of which forty only were serious, this confirming the present writer's experience of more than forty-five years, during which he can remember but one death from lead poisoning and not very many mild cases. He has known hundreds of painters, and those for the most part compared favourably in health and appearance with men in other building trades.

Among well-trained painters the precautions are well understood, and lead poisoning is rare. It is among the untrained men, ignorant of the importance of cleanliness, which they have never practised, and who obtain work as painters, that the real danger of lead poisoning exists. For danger there is in every trade; and it should be the object of the wise to seek and enforce the proper precautions—not to destroy an industry.

J. D. CRACE, F.S.A. [Hon.A.].

19th March 1913.



9 CONDUIT STREET, LONDON, W., 12th April 1913.

CHRONICLE.

The Art Standing Committee.

It will be of assistance to the members of the Art Standing Committee if architects and others who may see this notice would kindly inform the Hon. Secretary of that Committee whenever any matter likely to require its action comes to their knowledge. It sometimes happens that from want of information early enough to render action effective, the Committee and the Council of the Institute are compelled to remain passive where timely information might have enabled them to act beneficially.

Prizes and Studentships 1914.

The subjects of competition for the Prizes and Studentships in the gift of the Royal Institute for the year 1914 have now been arranged, and full particulars, together with the conditions of competition, will be found in the pamphlet now on sale at the offices of the Institute, price 3d. Attention is particularly drawn to the new Travelling Studentship, to be known as the "Henry Jarvis," tenable for two years at the British School at Rome. Full particulars of the latter are given below.

THE ESSAY MEDAL AND TWENTY-FIVE GUINEAS, open to British subjects under the age of forty years, will be awarded for the best essay on a subject of architectural interest which may be chosen by each competitor for himself. Competitors will be expected to make a useful contribution to knowledge by accurate research, so that the Essays can be accepted as authoritative statements on the subjects dealt with. Candidates in the Final Examination competing for this Prize may submit their Essay as the thesis required under Division (F) of the Programme [see KALENDAR, p. 420].

THE MEASURED DRAWINGS MEDAL AND TEN GUINEAS, open to British subjects under the age of thirty years, will be awarded for the best Measured Drawings made by the competitor of any important building—Classical or Mediaeval—either in the United Kingdom or abroad. Candidates may apply to the Records Committee of the Royal Institute for guidance and direction as to subjects.

THE SOANE MEDALLION AND £100, open to British subjects under the age of thirty years, will be awarded for the best design for an Official Country Residence for a Royal Personage in the United Kingdom, the

design to include the laying out of the grounds. The scheme is to combine the dignity of a residence or palace with the rural character of the private house of a nobleman. The accommodation suggested includes hall and reception rooms, banqueting hall, ball-room, library, chapel, complete private residence, suites of rooms for official and private guests, household and domestic offices, stabling, &c. The winner has to study abroad for at least six months, and must furnish satisfactory evidence of his studies in the form of measured drawings and sketches.

THE PUOIN STUDENTSHIP (SILVER MEDAL AND £40), open to members of the Profession (of all countries) between the ages of eighteen and twenty-five years, and intended for the study of the Mediæval Architecture of Great Britain and Ireland, will be awarded to the competitor who submits the best selection of drawings and testimonials. Special value is attached to perspective sketches done on the spot of an explanatory rather than a pictorial nature, and to measured drawings. The winner has to devote a tour of not less than eight weeks to the study of mediæval architecture, and furnish the Council with an illustrated paper descriptive of his tour, together with his measured drawings, sketches, &c.

THE GODWIN BURSARY (supplemented by the Wimperis Bequest): A SILVER MEDAL AND £65, intended for the study of Modern Architecture Abroad, and open to British subjects without limitation as to age, will be awarded for the best selection of practical working drawings (the competitor's own work), or other evidence of special practical knowledge, and testimonials. The winner is required to spend at least five weeks abroad in the investigation of modern planning and modes of construction, drainage, water supply, ventilation, and other sanitary arrangements, and must, before the 21st December, deliver to the Council an illustrated descriptive report of his researches. He may confine his inquiries and report to one building only if of sufficient importance.

THE OWEN JONES STUDENTSHIP (CERTIFICATE AND £100), founded for the encouragement of the study of architecture, more particularly in respect to Ornament and Coloured Decoration, and open to members of the profession under the age of thirty-five years.—Candidates must submit testimonials, with drawings, some of which must be from existing buildings and from other examples, exhibiting their acquaintance with colour decoration and with the leading subjects treated of in Owen Jones's *Grammar of Ornament*. Candidates must exhibit acquaintance with the application of colour as a means of architectural expression, not alone by the use of pigments, but also in the juxtaposition and combination of different coloured materials. The winner has to devote a tour of at least six months' duration to the improvement and cultivation of his knowledge of the successful application of colour as a means of architectural expression, and to furnish the Council with an original design in coloured decoration of a prescribed subject, together with an illustrated memoir of his tour.

THE TITE PRIZE (CERTIFICATE AND £30), open to British subjects under the age of thirty years, will be awarded for the best Imaginative Composition in Perspective in the Italian Style for an important Fountain, with which is to be associated large scale sculpture. The architectural treatment must be in accordance with

the methods of Palladio, Vignola, Wren, or Chambers. The winner is required to study in Italy for four weeks, and give satisfactory evidence of his studies there in the form of measured drawings and sketches.

THE HENRY JARVIS STUDENTSHIP, value £200 a year, tenable for two years at the new British School at Rome.—Candidates must be British subjects and under the age of thirty at the date of entry for the Final Competition, and must be either Associates or registered Students of the Royal Institute. The competitions for the Studentship will be held in conjunction with the competition for the Scholarship (tenable for three years at the British School at Rome) offered by the Royal Commissioners for the Exhibition of 1851, and will be conducted on the premises of the Royal Institute under the direction of the Faculty of Architecture of the British School at Rome. Candidates must be prepared to go through two competitions, of which the Final will be held in the autumn, about three months after the First Competition. Candidates will be entitled to compete more than once in the First Competition until they have gained the Studentship or are debarred by the age limit. Three months will be allowed for the preparation of designs, reckoned from the date of the publication of the subject with its conditions. From the candidates who have competed in the First Competition the Committee of Examiners will select not more than ten candidates for the Final Competition. The subject for the Final Competition will be set by the Committee of Examiners, and will be announced in the room on the opening of the first sitting of the Competitors. The Competition will begin at 10 A.M. on a Monday morning and continue till 1 P.M. on the Saturday of the week following. Competitors will be required on the first day to make a sketch design, which will be covered with a sheet of tracing paper sealed down in the compartment by the Moderator at the end of the first day. In his finished design the competitor will be required to adhere substantially to the sketch design. The candidate placed highest in the Final Competition will be awarded the Jarvis Studentship, unless he elect to take the Commissioners' Scholarship above referred to. In the latter case the Jarvis Studentship will be awarded to the candidate placed next on the list. The Scholarship and the Studentship will not in any case be awarded to the same candidate.

THE GRISSELL PRIZE (GOLD MEDAL AND TEN GUINEAS), for the encouragement of the study of construction, and open to British subjects who have not been in practice more than ten years, will be awarded for the best Design for a four-story Dock-side Warehouse.

THE ARTHUR CATES PRIZE (FORTY GUINEAS), founded for the promotion of the study of Architecture, more especially in relation to the application of geometry to vaulting, stability of edifices, and design, and open to British subjects who have passed the Institute Final Examination at one sitting. Candidates must submit not less than two sheets comprising studies of subjects of Classical or Renaissance and of Mediæval Architecture, accurately drawn in perspective and shaded by rule, and also detailed studies of a ground vault of any period.

THE ASHPITEL PRIZE (BOOKS VALUE £10), awarded to the student who distinguishes himself most highly in the Final Examination of the current year.

The Admiralty Arch.

Lord Alexander Thynne writes in yesterday's *Times* :—

People who take an interest in the architectural future of London will welcome the growing disposition on the part of the Government to invoke the assistance of an independent committee of experts when they find themselves confronted with an architectural difficulty. Quite recently this course was pursued with signal success in the case of the Regent Street Quadrant. The committee, over which Lord Plymouth presided, have presented a report which in many respects is a model of what such a report should be, and its main recommendations promise to be satisfactory both to the architectural opinion of London and to the business interests involved.

It now appears, from what transpired in the House of Commons last Thursday evening, that the Government are quite prepared to adopt a similar expedient in regard to the Admiralty Arch, and surely there never was a subject more in need of a breath of fresh air from outside. It is associated in the mind of the public with what they regard, quite wrongly, as a silly wrangle between the London County Council and the Government as to who should pay. The financial considerations are, no doubt, important, especially to the present generation, but posterity will be more concerned with the manner in which the approach is treated. What is done within the next few months will be irrevocable; and posterity will have good reason to pass a harsh judgment upon the citizens of to-day if we proceed without taking the best architectural opinion available, for the site is a most important site, and the Arch, whether you like its design or not, a most important edifice.

Furthermore, the actual position of the Arch and the deflection of the axial line have created an architectural problem very difficult, if not wholly impossible, of solution. From time to time alternative suggestions have been propounded by experts and others, and it is obviously too much to expect that the lay mind, even with the help of attendant officials, will be able to decide the right architectural manner of treating the approach, especially when the lay minds concerned may have a not unnatural inclination to do as little as possible for as low a cost as possible.

I therefore hope that a small and wholly independent committee will be appointed, on the same lines as the committee which considered the Quadrant, although not necessarily of the same personnel; such a committee could be relied upon to present, without any substantial delay, a practical and sensible report on the architectural aspects of the question, quite irrespective of who should pay the cost, but having due regard to those considerations of economy which are inseparable from any scheme on which public money is to be spent.

Canterbury Cathedral.

Dr. Wace, Dean of Canterbury, is making a further appeal for contributions to the fund he is endeavouring to raise in order to complete the reparation of the towers of Canterbury Cathedral. Of the three towers the great central, or Bell Harry Tower, and the north-west tower have been satisfactorily repaired, and the greater part of the requisite repairs of the Chichele Tower have been executed, the pinnacles in particular, which it had been necessary to take down for safety, being now restored to their former beauty. But £2,000 more is required to complete the reparation of the Chichele Tower, and unless this sum is obtained soon, the works will have to be stopped, and the tower must remain indefinitely in the scaffolding

which now surrounds it. In a letter to *The Times* the Dean says :—

I hope it will be sufficient to state the facts in order to move the hearts of some generously-minded people to complete, what I may fairly call, this national duty. When I came here ten years ago the three towers, which are the chief external ornament of the Mother Church of England, were in a state of perilous decay. By an expenditure, up to the present date, of rather more than £30,000, of which the Dean and Chapter have themselves contributed about one-tenth, two of the towers have been thoroughly repaired and made safe for some generations; and it needs only the £2,000 for which we now plead to complete the reparation of the third. Some other reparations will still be necessary, such as that of the pinnacles of the nave and of Becket's Crown. But these can be done gradually, and at my age, perhaps, they may fairly be left to my successors. But I hope I may have the satisfaction of leaving the three towers completed.

Contributions may be sent either to the Dean or to the account of the Cathedral Reparation Fund with the Capital and Counties Bank, Canterbury.

Professor Petrie's Egyptian Collection.

Professor W. M. Flinders Petrie, F.R.S. [*Hon. A.*], who since its foundation in 1892 has occupied the Edwards Chair of Egyptology at University College, London, has offered his Egyptian collection to University College for £5,985. An appeal is now being made on behalf of the College for subscriptions to enable it to acquire this valuable collection, which is stated to be offered to the College substantially at cost price. The option to purchase expires in June, and if University College is not then in a position to accept, it is possible that the collection may find a home elsewhere, and so cease to be available for teaching purposes in London. The sections of pottery, beads, and scarabs are quite unique, and form the essential basis of the practical study of Egyptian archaeology. Another important section includes tools and various objects illustrative of the technical arts and processes of ancient Egypt. The objects illustrate glass-making, weaving, stone-working, metal-working, casting, building, and all other arts which were practised in Egypt. Among others may be mentioned an architect's drawing for a shrine, giving the elevation of the front and side. There is also a general collection of statuettes, stone-work, amulets, textiles, metal-work, wood-work, faience, &c., selected for illustrating all varieties of work and all periods. University College was the pioneer in teaching Egyptology in this country, as well as in instituting a systematic training course in this subject. The importance of such a collection as Professor Petrie's in training students in Egyptian archaeology is manifest, and it is hoped that funds may speedily be forthcoming to enable the College to purchase this valuable instrument of teaching. Donations may be sent to the Hon. Rupert Guinness, M.P., Treasurer of the Equipment and Endowment Fund, University College, Gower Street, London, W.C.

Irish Architects and the New Art Gallery, Dublin.

The following resolution was unanimously adopted at a meeting of the Council of the Royal Institute of the Architects of Ireland held on the 7th inst.: "That the Council deprecates the apparent intention of the promoters of the new Municipal Art Gallery building to withhold from Irish architects the opportunity of submitting designs. The Council further regrets that it is proposed to associate an Irish architect with Mr. Lutyens. Similar action has prevented Irish architects from exhibiting their skill in design on more than one occasion in recent years. The Council would suggest that an open competition for the design be inaugurated, and that Mr. Lutyens be asked to act as assessor."

OBITUARY.

Sidney Robert James Smith, who died on the 28th March at the age of fifty-five, was elected Associate in 1879, and Fellow in 1891. He was the elder son of Mr. John Smith, of South Lambeth, and served his articles with Mr. Bedborough, of Southampton and London, with whom he remained as assistant for four years. He was afterwards assistant in the office of Messrs. Coe & Robinson, and on Mr. Robinson's death became associated with Mr. Coe in partnership, being jointly responsible with him for the South Devon and East Cornwall Hospital, the Agricultural Hall, Kensington, Holy Trinity Church, Worthing, and other buildings. He started in independent practice in 1879, his first important commission coming from the Lambeth Guardians in the shape of the Norwood Schools, carried out at a cost of some seventy thousand pounds. He was the architect of a number of public libraries in London, including those at Norwood, South Lambeth Road, Brixton, Kennington, Streatham, Balham, Greenwich, Hammer-smith; also of the additions to All Saints' Church, South Lambeth, All Saints' Institute, the Cripple-gate Polytechnic Institute, Golden Lane; the Library of New Bedford College, Regent's Park, now erecting; concert room and examination hall for the Royal College of Music; the Augustus Harris Memorial Fountain at Drury Lane Theatre, &c. His best known work is the Tate National Gallery of British Art, Millbank, opened by King Edward in July 1897. He was architect also of the Picture Gallery at Streatham for Sir Henry Tate, and of the Tate Memorial. In January 1899 Mr. Smith was appointed architect to the Lambeth Board of Guardians, for whom he carried out a large number of important buildings.

Robert Henry Burden, whose death is announced, was elected a Fellow of the Institute in 1878. Mr. Burden started in practice some fifty-five years ago. He was architect of the workhouse and infirmary, with parochial offices, &c., at Upper Holloway; the Craven Schools and Lecture Hall, Marshall Street,

Golden Square; the Model Dwellings, Grosvenor Mews, for the St. George's Association; Schools at Starch Green; South Street Schools, South Audley Street, and numerous villa residences and business premises in various parts of London and suburbs.

John Medland, whose death occurred at the Charter-house on the 14th March, aged seventy-two, was at one time a member of the Institute, having been elected Associate in 1881, and Fellow in 1892; he resigned membership about five years ago. He served his articles with Sir G. Gilbert Scott, and worked with him for many years as assistant. Mr. Medland made the designs for the altars and reredos of the chapel in Queen Square, Bloomsbury, and of St. Katharine's Convent of the Sisters of St. Margaret's, East Grinstead; the restoration and redecoration, with new roof, of St. Stephen's Church, Tredegar Road, Old Ford, E., and All Saints' Church, Buxton Street, Spitalfields, E., together with the oak carving in the chancel; the reparation, with new vestry, redecoration of the sanctuary, carved oak screens in the choir, and marble screen in the chancel, marble font, and carved oak pulpit, &c., St. Peter's Church, Bethnal Green; the altar-cloth, St. Paul's Cathedral; and the memorial, consisting of a richly decorated and enamelled brass tablet, having massive silver studs, surmounted with repoussé silver figures of angels carrying a gold chalice, all set in a moulded black marble frame, supported by carved Devonshire marble corbels, erected seven years ago in Buckerell Church, Honiton, to the memory of the late vicar.

MINUTES. XI.

At the Eleventh General Meeting (Ordinary) of the Session 1912-13, held Monday, 7th April 1913, at 8 p.m.—Present: Mr. Reginald Blomfield, A.R.A., *President*, in the Chair; 28 Fellows (including 10 members of the Council), 25 Associates (including 2 members of the Council), 9 Licentiates, and numerous visitors—the Minutes of the Meeting held 17th March 1913, having been already published, were taken as read and signed as correct.

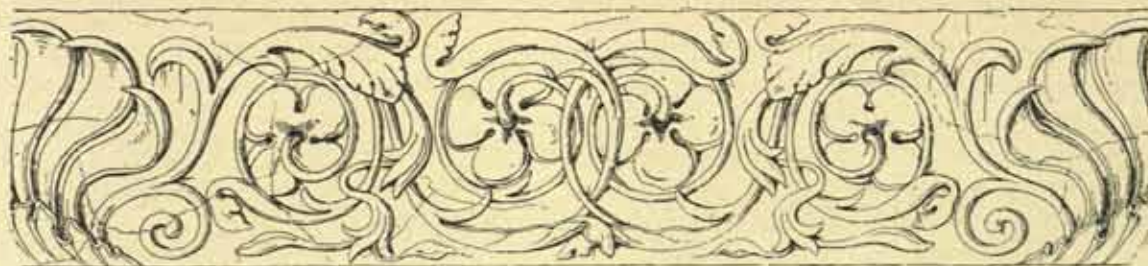
Mr. E. Guy Dawber, *Vice-President*, acting for the Hon. Secretary, announced the decease of Sidney Robert James Smith and Robert Henry Burden, *Fellows*.

The following Associates attending for the first time since their election were formally admitted by the *President*—viz. Arthur Stanley George Butler, Edmund Herbert Gibson, and Stanley Philip Schooling.

On the motion of the *President* the thanks of the Royal Institute were accorded by acclamation to M. Bonnat, Director of the Ecole des Beaux-Arts, and to M. Hulot, for the loan of the latter's *Concours* drawings for the Grand Prix de Rome exhibited at the Institute in connection with M. Billerey's Paper on Modern French Architecture [*JOURNAL*, 29th March 1913].

Mr. Cecil C. Brewer [*F.*] having read and illustrated by lantern slides a Paper, based on his Report as Godwin Bursar 1911, on AMERICAN MUSEUM BUILDINGS, a discussion ensued, and on the motion of Professor Beresford Pite [*F.*], seconded by Dr. Evans Hoyle, Director of the Welsh National Museum, a vote of thanks was passed to him by acclamation.

The Meeting separated at 10 p.m.



MODERN STEEL BUILDING CONSTRUCTION.

By FRANK N. JACKSON, A.M.Inst.C.E. [*Hon.A.*], and BERNARD DICKSEE [*F.*].

Read before the Royal Institute of British Architects, Monday, 21st April 1913.

L. SOME POINTS IN THE DESIGN. By FRANK N. JACKSON.

IN compiling my notes for this Paper I have endeavoured to describe very briefly the preparation of the designs and drawings for the steel construction of buildings, touching upon some of the rules laid down in Part IV. of the London County Council (General Powers) Act of 1909 which now govern the design of what are called steel-frame buildings. For whilst the provisions of the 1909 Act are in the main excellent and will undoubtedly tend to improve the general standard of steel construction in London, there are some clauses for which one cannot quite account and which seem to bear rather heavily upon the cost of the construction. No discretion appears to be left to the District Surveyor, and one can only appeal on certain points to the County Council.

In commencing the design of the steel construction for a building we have to settle with the architect :

1. The loads to be provided for at the various floor levels.
2. The best arrangement of the stanchions and main and secondary beams, keeping in view the requirements of the building at the various levels, and economy and sound design.
3. Key-plans are then prepared, usually to a scale of $\frac{1}{8}$ inch to 1 foot, showing all girders and stanchions. On each plan are shown the girders on the next floor above, and the stanchions supporting that floor.
4. We then proceed to calculate the loads on the various beams, finding the reactions on the supports and the various forces acting on the beams, writing the loads at each end of the girders on the key-plans. All the beams and stanchions are numbered on the plans and in the calculation books, and so all information respecting any beam or stanchion can be readily turned up.
5. We then find the most economical sections for the various beams, using plain rolled steel joists as far as possible, and where the stresses become too great for plain joists, compounds of joists and plates or riveted plate girders with single or double webs. In doing this we must take into account the maximum permissible bending stress, the maximum shear on web and on rivets, the deflection of the beam, stiffness of web, &c., &c.
6. Having arrived at the sizes of the beams, we work out the loads upon the stanchions, adding in at each floor level the reactions from the beams due to dead and superimposed loads. We thus form a table for each stanchion, showing the total weight at each level, and from this design the section of each length to suit the weight to be carried and resist any eccentricity of loading.
7. Having fixed upon the best section for the stanchion and arrived at the total load at the base, we then design the grillage, which is a beam or series of parallel beams. On the top

of this beam we have the load of the stanchion distributed over a short length in the centre, and under the beam we have the equal upward reaction of the concrete foundation distributed over the whole length of the grillage. The algebraic sum of the bending moments from these two loads is the total bending moment on the beam, which must be designed to resist this bending moment and the shear due to half the load. The grillage beams must also be made sufficient as a pillar to take the total load of the stanchion.

8. The grillage completed to our satisfaction, the size of the concrete foundation for each stanchion is then to be determined from the total load and the nature of the earth at the site. This is a very important matter, and should not be finally settled without careful inspection at the site, and it is most advisable to have borings made to ascertain the nature of the subsoil for some distance below the intended level of the foundations.

9. Complete key-plans and detail drawings are then prepared, from which prints can be made and from which exact quantities can be taken.

10. Tenders are then invited, the contractor basing his price upon the weights in the bill of quantities and upon the labour described in that bill and shown upon the drawings, which should be in sufficient detail to give a good idea of all classes of work to be found in the structure.

When the contract for steelwork is let, orders are placed by the manufacturer with the rolling mills, the material to be made to the test specified.

When the material is rolled and cut to lengths, an inspector attends and takes samples of the bars or plates rolled from each cast or melting. These samples are submitted to mechanical tests for breaking, elongation, and contraction of area. Bending tests also are made after the samples have been heated and slacked out in water. These bending tests are most important. I have known of rods delivered for reinforced work standing excellent tests in breaking, but the material was so unsatisfactory that some of the bars cracked when bent cold to an angle of about 110 degrees. Upon objection being raised the contractors had the bars tested for tensile strength only, showing a high breaking stress, and so managed to get the work passed.

Tests being passed, the material goes on to the yard, and should be carefully straightened, set out and drilled, shaped and riveted as required by the drawings. After inspection, which should be as close as practicable during manufacture, the material is either painted or coated with cement wash and delivered on the site to be there erected.

ERECTING STEELWORK.

The concrete foundations being ready, the grillages should be set up on steel skids and the stanchions hoisted and bolted to the grillages.

The stanchions should have all the girders put in and bolted up as far as the first joint. The stanchions are then carefully lined up, and the floor girders levelled by wedging under each member of the grillage so that the base of the stanchion is in contact with each grillage beam when the floors are level. If this be done it will be found that the girders will plumb the stanchions. After all is level and in line the grillages may be grouted up solid and riveting may proceed. If this course be not adopted, there is a great waste of time and labour and the result is not good.

One sometimes sees men levelling the grillages separately with a straight-edge and carpenter's level. The staff may be 8 to 10 feet long. In the stanchion itself we have a plumb rule 40 to 50 feet long. Even if the grillage be set as level as possible with the staff the tops of the separate beams are never quite true or straight, and will not give an even bearing for the base of the stanchion unless wedged up under it.

LOADS ON FLOORS.

These are now fixed, where the work comes under the 1909 Act, and for the lightest class of floor, for human habitation, we have to provide, in addition to the total dead weight of the structure, for a superload of 70 lbs. or $\frac{1}{8}$ cwt. per square foot of floor area. This means that in a bedroom with a floor area of 200 square feet we provide as superload for furniture and occupants of $6\frac{1}{2}$ tons. Allowing, say, $1\frac{1}{4}$ tons for the furniture, &c., this leaves 5 tons for, say, two people. Where there are several stories of bedrooms in the building the superloads on the stanchions may be discounted within fixed limits, so that where we have nine floors of bedrooms the average superload from each room on the stanchion would be only 5 tons per floor, say $1\frac{1}{4}$ tons for all furniture and $3\frac{3}{4}$ tons for two people in each room, or about $37\frac{1}{2}$ cwt. per person.

There seems to be no danger of the floors and stanchions for domestic buildings calculated on these lines becoming overloaded—in fact, they might be used with perfect safety for light warehouse purposes. I am informed that upright grand pianos, occupying 12 square feet of floor, weigh about 6 cwt. each, so that goods of this class stored with usual clearances would not make up the superload of $\frac{1}{8}$ cwt., probably not more than $\frac{1}{16}$ cwt., per square foot.

Taking a floor in which the steel is stressed to $7\frac{1}{2}$ tons, with dead load $\frac{1}{8}$ cwt. and superload $\frac{1}{8}$ cwt., to reach the average breaking stress on the steel the superload would have to be increased seven times. To stress the steel near the limit of proportionality, the superload would have to be doubled.

The superload fixed for office floors is equivalent to 100 lbs. per square foot dead load. I think there are few offices properly so called where this load is ever attained or even approached, except under the safes. With such a provision, plus the dead load, office floors will in future have to be taken at least at $1\frac{1}{2}$ cwt. per square foot of floor area, and in many cases considerably more, as the floor construction with the partitions will in most cases exceed 70 lbs. per square foot.

I am aware that architects have in the past very generally specified an inclusive load of $1\frac{1}{2}$ cwt. for such floors when inviting tenders, but there has been an enormous difference between the ordinary competitive commercial provision for such loads and what is now required under the 1909 Act. I have generally found in comparing such competitive schemes that the maximum stresses on the steel generally were about 10 tons per square inch or more. In the most remarkable case that has come under my notice stresses of 16, 22, and 24 tons per square inch were found, taking the loads given by the designer at $1\frac{1}{2}$ cwt. per square foot inclusive of the dead weight, and this in a London theatre building. These drawings were accompanied by a letter stating that the stresses on the steelwork did not exceed $7\frac{1}{2}$ tons per square inch, the limit now prescribed.

BENDING STRESSES IN BEAMS UNDER THE 1909 ACT.

Where the construction comes under the provisions of this Act the maximum bending stresses in the beams must not exceed the defined limit of $7\frac{1}{2}$ tons per square inch extreme fibre stress.

Of course, some hard and fast line must be laid down, but it seems to me that for solid rolled beams a limiting stress of 8 tons per square inch would have been a more reasonable limit to adopt, taking into consideration the fact that in most buildings one-third to one-half of the load upon the beams is absolutely dead or unchanging, and that the live or variable load changes little, and then very gradually. For the floors of buildings generally, a maximum fibre stress of 8 tons per square inch on solid rolled beams of steel made to the British Standard Specification would ensure an indefinitely long life to the structure, and that is what is aimed at. It

has been the practice of many engineers working on sound lines to adopt this stress on rolled-steel beams of 8 tons per square inch, and in riveted girders of all kinds to limit the maximum fibre stress to $7\frac{1}{2}$ tons per square inch, as is now done under the Act.

May I here point out that an extreme fibre stress of 8 tons per square inch in rolled-steel beams of the largest size means an average stress in the flange of the beam of less than $7\frac{1}{2}$ tons per square inch, and in the smaller beams the average stress in the flanges is generally still less?

In riveted beams there are naturally more opportunities for slight defects in the drilling and riveting, and inequalities of stress are more likely to occur owing to minute differences in the application of the stresses through the rivets, so that a little more margin is desirable in riveted work than in a solid beam rolled in one piece to the standard test. This inequality of stress is to be noticed in the testing of reinforced concrete beams, where under test of a beam with four bars, the beam does not fail as a whole, but the bars break one at a time, partly, no doubt, owing to the bars not being equally straight, and partly from other causes, such as variable adhesion or variable height in the beam.

In considering the desirable or proper limits of stress on mild steel we must keep in mind the following points: whether the maximum stress adopted will during the life of the building cause injury to the steel; whether the stress adopted will cause such deflection or deformation as will injure the structure. In mild rolled steel we have a material which is perfectly elastic up to about 12 tons per square inch and whose yield point is about 18 tons per square inch.

We are dealing with a material in which the beams never collapse suddenly when overloaded, as cast-iron and concrete beams occasionally do. Mild-steel beams well held laterally will carry nearly four times the working stress of 8 tons without breaking, and in their ordinary sizes and spans before reaching the yield point of the material will deflect so seriously that they cannot fail to attract attention and give warning of danger.

Compare this with the singly-reinforced concrete beam, which at or near the yield point of the steel will yield and fail suddenly, so that a beam of this kind, with mild steel stressed under working conditions to $7\frac{1}{2}$ tons per square inch, has a factor of safety over collapse of about $2\frac{1}{2}$. The concrete beam again deflects less than the steel beam before giving way and so gives less warning. I have seen such a beam fail suddenly under test with a deflection of only $1\frac{1}{4}$ inch in 15 feet.

I mention this because the floor slab in buildings constructed of steel beams and stanchions is frequently made of reinforced concrete of one form or another, and as parts of the slab are frequently loaded considerably above the average load on the whole floor, the slab should have a margin of safety fully equal to that in the beams and stanchions.

In the same way in railway and other bridges the floors are designed to carry heavy rolling loads, which affect most severely the bearers and cross-girders immediately under the weight. The stresses in some of these bearers will vary between 1 ton and 6 tons per square inch. The stresses in the main girders will probably not vary more than 2 to 3 tons per square inch.

DEFLECTION OF BEAMS.

Where the span of a beam does not exceed twenty-four times its extreme depth, the beam may be stressed up to $7\frac{1}{2}$ tons per square inch under the 1909 Act.

Loading a 12 inch by 6 inch 54 lb. R. S. J. 24 feet-span with a distributed load of 18 tons, the maximum fibre stress is $7\frac{1}{2}$ tons per square inch. The deflection of the beam is about $\frac{9}{100}$ of an inch, say $\frac{1}{30}$ of the span. But if the span exceeds twenty-four times the depth of the beam, we must under the Act at once reduce the deflection limit to $\frac{1}{400}$ of the span, or 25 per cent.

Take, again, the 12 inch by 6 inch 54 lb. R. S. J. 24-feet span, and loaded this time with a concentrated load of 33 tons at a distance of 14 inches from each support: the shear and bend-

ing stresses are still within the limits defined by the Act, and the deflection is increased to 1.8 inch, or about $\frac{1}{100}$ of the span, or about two and a half times the deflection allowed where the span of the 12-inch beam is 24 feet 1 inch.

This will show that we have a fairly wide range as regards deflection, but it seems a pity that one uniform deflection-limit was not adhered to throughout. In my view, a standard deflection for beams of 1 inch in 40 feet and a maximum fibre stress of 8 tons per square inch would have given far better results.

WEB STRESSES IN BEAMS.

The limiting shearing stress on mild steel is fixed under the Act at $5\frac{1}{2}$ tons per square inch. Thus a heavy 12 inch by 6 inch R. S. J. may be used up to a certain span to carry a distributed load of 66 tons. The web of a beam is to be stiffened where the depth of the beam exceeds sixty times the thickness of the web plate. Few engineers would desire to exceed this limit. The limiting shear usually adopted on an unstiffened web of ordinary proportions is 4 tons per square inch.

PLATE GIRDER WEBS. BEARING. [Fig. 1.]

It is not uncommon to find the webs of plate girders kept $\frac{1}{8}$ inch to $\frac{1}{4}$ inch short of the backs of the main angles. This saves expense in ordering materials and saves labour, and in light girders the point is not important. But in buildings, as a rule, plate girders are used only to carry heavy loads, and here it is most important that the webs should be finished flush with the backs of the main angles, at least under and over heavy concentrated loads, such as stanchions. The vertical stiffeners commonly used in single web and in box plate girders are made as close fitting in the root of the main angles as possible, and there is generally some small riveted connection on the stiffener end, but the dead bearing of the concentrated stanchion weights on the web itself is most valuable and should be insisted on. In first-class yards, used to good railway and bridge work, webs are always finished exact to backs of main angles, the top and bottom edges of the web-plates being planed and finished as carefully as the butt joints.

BEARING OF GIRDERS ON BRACKETS.

It is not uncommon in buildings to see girders carrying considerable loads of from 10 to 15 tons, supported on an angle bracket $\frac{1}{2}$ inch thick riveted to the side of a stanchion [figs. 2 and 3]. The end of the girder is commonly $\frac{1}{8}$ inch to $\frac{1}{4}$ inch short of the face of the stanchion, and so does not bear fairly upon the vertical leg of the angle bracket. Such connections of weight-bearing beams are altogether to be avoided, and where it is impossible to make the end of the girder fit close to the stanchion, the angle bracket should be packed out so that the whole of the vertical leg may be available for a bearing [fig. 4].

In addition to the bracket bearing the weight, and to any top connection which may be required, the webs of all girders carrying any considerable load should be stiffened over their bearings by angles riveted to both the web of the girder and the stanchion. Another form of bracket sometimes used consists of an angle bracket with vertical tees or angle stiffeners under, somewhat as sketch [fig. 5]. This form of bracket was perhaps a trace of C.I. stanchion design, or possibly was first intended to put the rivets in the vertical flange of the angle bracket into double shear, and so use them to carry twice the load. The bracket also probably was intended as a secondary consideration to increase the length of the bearing of the R. S. J., but its value in this respect is doubtful. It is very difficult to make all these vertical stiffeners fit so closely to the soffit of the angle as to take the load well. Another point is that if the vertical stiffener does fit well up the eccentricity of the load must be measured from the centre of this long bearing and so is increased, and the tension on the rivets in the brackets becomes considerable.

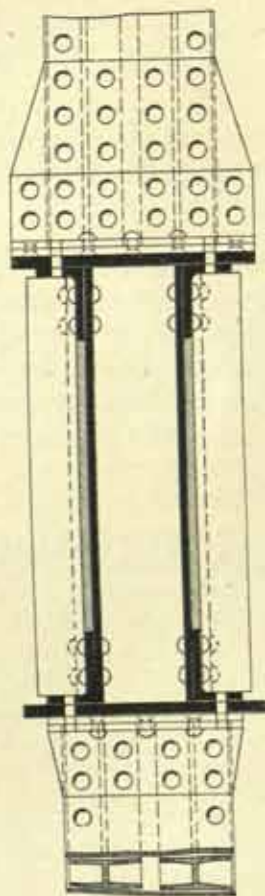


FIG. 1.

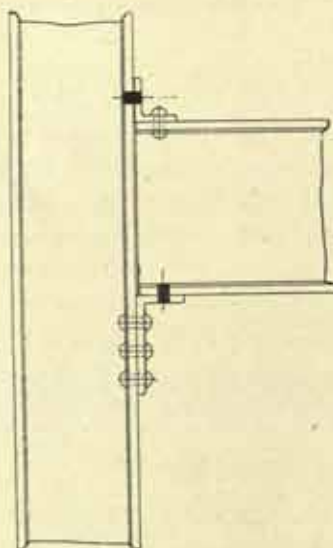


FIG. 2.

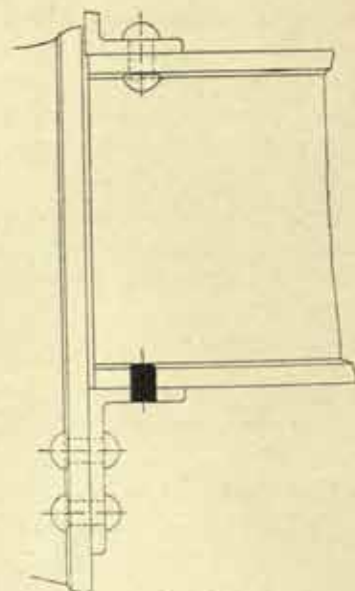


FIG. 3.

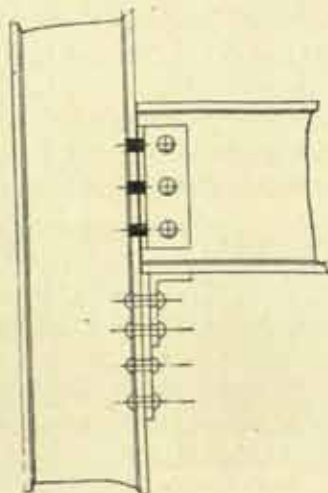


FIG. 4

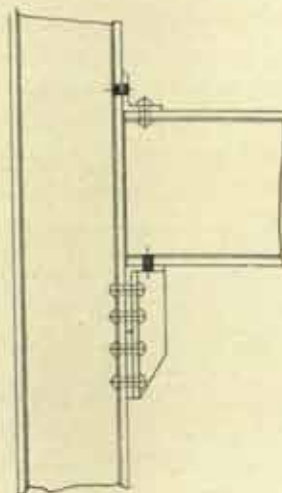


FIG. 5

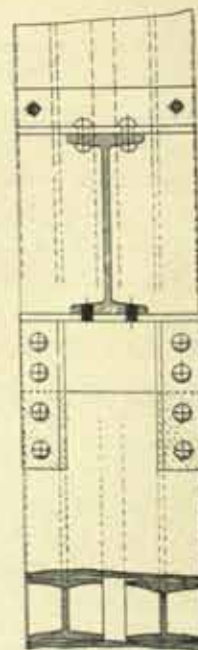


FIG. 6.

Further, these brackets with the vertical tee stiffeners are most unsightly and difficult to case. One sometimes finds the stiffeners under the angle brackets as fig. 6, where they are of little or no use, the angle bracket having to carry as a beam.

BEAM SECTIONS.

These again must depend upon the loads and upon their application. Where suitable the single-web section is the cheapest, and the rolled-steel beam is the cheapest of all if it will serve the purpose. We have in the single-web beam the maximum amount of material in the flanges, at the greatest distance from the neutral axis. The next section is the single-web compound girder of R. S. J. and flange plates as required, the riveting in the flange plates being designed to pick up the total stress in the plates.

Where the load becomes too great for a single-web beam of allowable depth, compounds of two or more joists with flange plates will often be found economical. These make a good base for a stanchion or a wall. But where heavy loads are trimmed or connected on one side of such a beam, care must be taken that the half-beam on that side be sufficient to carry the whole of the eccentric load. Where the load is beyond the capacity of rolled-steel beams and their compounds, built up plate girders, with single or double webs, must be used. The general principles are the same, the sizes only being heavier.

COUPLING TWIN GIRDERS.

This provision seems a little strange. In one part of the Act we are permitted to use beams stressed to $7\frac{1}{2}$ tons per square inch when the laterally unsupported length of the beam does not exceed thirty times the width of its top or compression flange. That is, a 10 inch by 5 inch R. S. J., 12 feet 6 inches long, may be so used. But, should we use two 10 inch by 5 inch R. S. J.'s fairly close together to carry a wall, these two beams, held together by the nature of the load, must be connected at intervals of 50 inches or less with bolts and separators.

A 10 inch by 8 inch R. S. J., 20 feet long, may be used alone, but two 10 inch by 8 inch R. S. J.'s of the same length used together must be connected in no fewer than six places, at intervals of 4 feet 2 inches or less.

The lateral stiffness of the beam is governed by the width of the compression flange and not by the depth of the beam. The lateral moment of resistance of the 10 inch by 8 inch beam is about four and a half times that of the 10 inch by 5 inch beam. The 9 inch by 7 inch rolled-steel beam again is about six and a half times as stiff sideways as the 9 inch by 4 inch beam, but each must be bolted and stiffened at intervals of 3 feet 9 inches or less when used as pairs. Of course, when we have a pair of beams with a concentrated load trimmed in on one side, one should always introduce a connection to equalise the load on the two beams, and where a stanchion or pier is to be carried the beams should be connected, and connection at the bearings of the twin girder are also desirable, but what is stipulated by the Act is, in my opinion, beyond reasonable requirements.

FLOOR SLABS AND DEFLECTIONS.

Seeing that the provision for live loads on floors is definitely fixed it is incumbent on the designer to keep the dead weight of the construction as low as possible, and as all steelwork must be filled solid with concrete, the small floor beams must be made as shallow as possible.

This can best be done by making all the small filler joists continuous over the main or secondary beams, reducing the deflection and the stress upon the steel.

The deflection of floor slabs has always been a difficulty. As before stated, where the beam does not exceed in span twenty-four times its extreme depth, it may be stressed under the Act to

$7\frac{1}{2}$ tons per square inch, giving a deflection of about 1 inch in 27 feet for uniformly distributed loads.

Where the span of the beam exceeds twenty-four times the depth, the deflection limit rises at once to 1 inch in 33 feet, so that the designer is almost compelled to make the depth of all non-continuous beams not less than one-twenty-fourth of the span.

That is, a 4-inch joist must not exceed 8 feet in span; a 5-inch joist must not exceed 10 feet in span; a 6-inch joist must not exceed 12 feet in span, and so on.

Where the filler joists cannot be made continuous over both supports it may still be possible to fix them at one end and so greatly reduce the deflection and effect economy.

4 by 3 inches R. S. J., 8 feet 6 inches span. Distributed load 1.66 tons. Stress 5.65 tons per square inch. Deflection 1 in 400.

4 by 3 inches R. S. J., 11 feet span. Loaded with $4\frac{1}{2}$ cwt. per lineal foot. Continuous at both ends of span. Total load $49\frac{1}{2}$, say, 50 cwt. Stress $7\frac{1}{2}$ tons per square inch. Deflection about half that allowed.

4 by 3 inches R. S. J. fixed one end only. 9 foot span. Loaded $4\frac{1}{2}$ cwt. per lineal foot = $40\frac{1}{2}$ cwt., say 2 tons. Stress under $7\frac{1}{2}$ tons per square inch. Deflection about half that allowed.

Lapped joists, 4 inch by $1\frac{3}{4}$ inch by 5 lb. [fig. 7]. Say, 11 feet span, $4\frac{1}{2}$ cwt. per lineal foot = $49\frac{1}{2}$ cwt., say $2\frac{1}{2}$ tons. Maximum stress, $7\frac{1}{2}$ tons per square inch. Deflection 1 in 400.

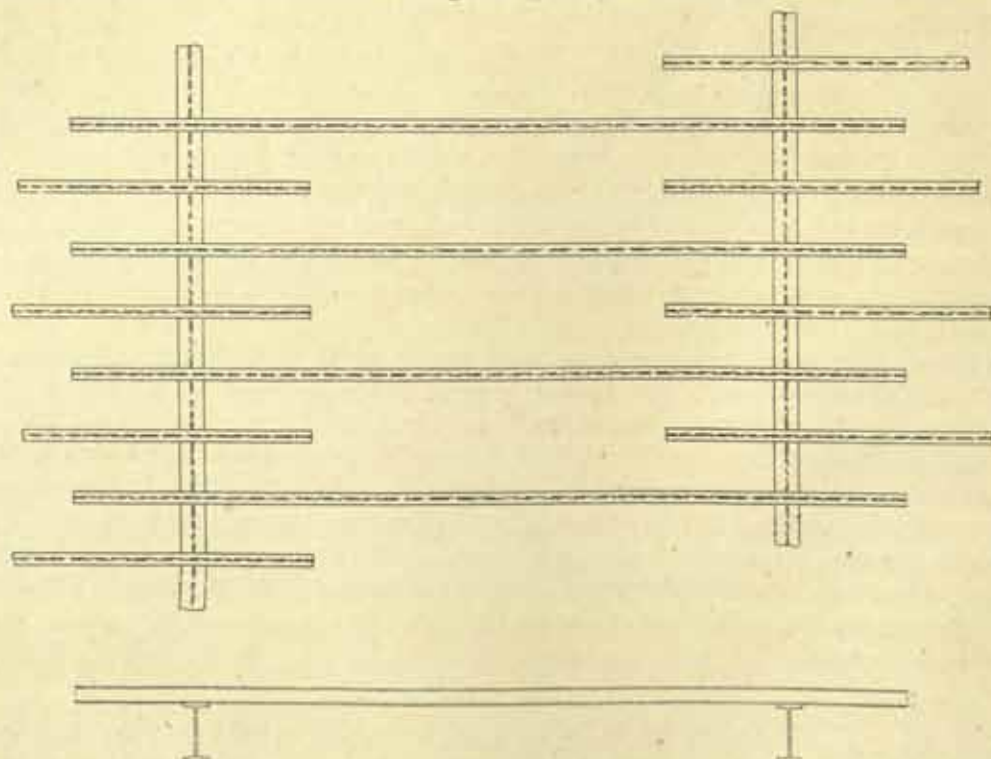


FIG. 7.

This last system may be arranged to form a very economical floor, as at the maximum stress-point over support we have the double joist section. At the centre of the span the stress is half that at the supports, and the section also is reduced by one-half. When this system can be adopted it will be found to be very low in cost. This system has the further advantage that

it is not affected by slight inequalities in the heights of the supports when the work is erected as the joists are in short lengths and rest upon two points only.

Where the continuous beams run in one length over three supports, the chances are against these three points being exactly level, but the relatively small depth of the joist will usually allow it to bear at all four points without pressure being applied.

In a non-continuous floor the slabs have a tendency to curve, as fig. 8, and unless the slab is made very stiff the tension in the concrete over the support exceeds its very moderate tensile strength, and cracks appear.

To avoid this cracking, wire meshing is sometimes placed in the concrete over the supports. The section of this meshing is not sufficient to fix the ends of the slab or to stop the cracking, but spreads the cracking over a larger area and so hides it or makes it less visible.

Where the floor slab can be made continuous over the supports [fig. 9] the deflection is greatly reduced and the deflection curve is flatter

and changes more gradually. The concrete will still crack where the stress on the steel exceeds two tons per square inch, but the cracking will be so distributed along the slab by the steel as to be almost invisible.

The ultimate strength of concrete is about 240 lbs. per square inch, say, $2\frac{1}{2}$ cwt. Taking the usual elastic ratio of 15 to 1, where the steel reaches a stress of 34 cwt. per square inch, the concrete will have reached its ultimate strength and will crack.

Where the continuous slab is made of reinforced concrete, the bars should be continued over the supports far enough to allow of them developing their maximum working stress over the supports. It is not sufficient merely to hook the reinforcing bars round the flanges of the main beams [fig. 10] as is sometimes done. One cannot be certain that the rods will all bear equally tightly against the beam, and they can only bear on the corners of the flanges. The extension of about 5 diameters with the concrete holding only partly round the bar is too small to be of any real value. To run the bars on, not only gets a better hold, but puts more useful material into the floor.

In a steel beam of uniform section, uniformly loaded and fixed or continuous at both ends, the maximum bending moment over the supports is two-thirds of the maximum bending moment of a non-continuous beam of equal span similarly loaded, that is, $\frac{WL}{12}$. The stress at the centre of the steel continuous beam is $\frac{WL}{24}$.



FIG. 8.

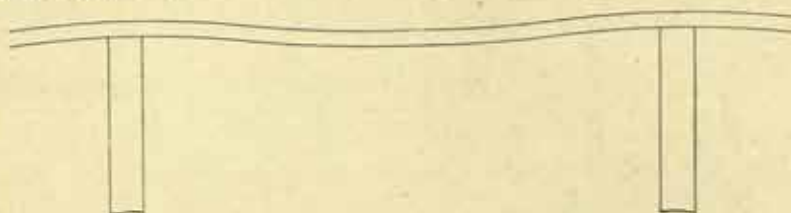


FIG. 9.

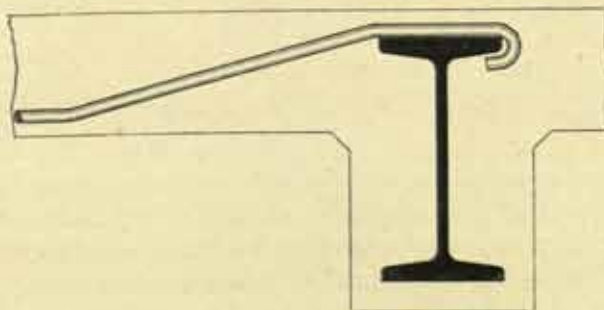


FIG. 10.

In the concrete beam the stresses are not so well defined. When the beam is free at both ends the stresses are only to be determined approximately. It is true that from given data we can calculate the position of the neutral axis to the thousandth part of an inch if desired, but the ramming of the concrete may displace small bars $\frac{1}{4}$ inch or more, and this cannot be seen in the finished work. The strength of the concrete varies within wide limits.

When we come to continuous beams of this material the stresses are still less definite and we are advised by the Joint Reinforced Concrete Committee to assume that the stress to be provided for throughout a reinforced continuous beam should be $\frac{WL}{12}$, and not $\frac{WL}{24}$ in the centre of the span as in the steel beam.

STANCHION SECTIONS.

The sections of stanchions must be made to suit the application of the loads and to transmit them as directly as possible to the foundations.

Thus where we have twin beams resting upon a stanchion, the stanchion itself should,

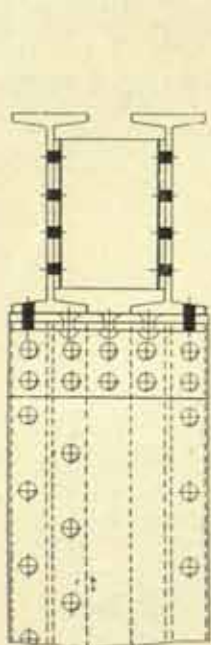


FIG. 11.

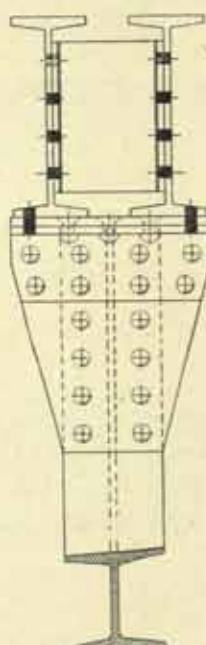


FIG. 12.

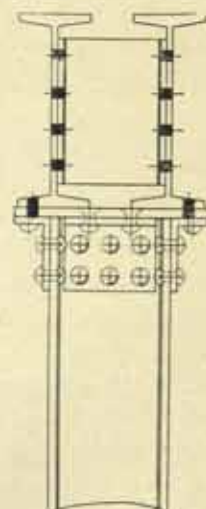


FIG. 13.

where possible, be made of two members whose webs will stand directly under the webs of the beams [fig. 11] and so give ample bearing area for the load.

When a single stanchion is used to carry twin beams [fig. 12], all or nearly all the load has to be carried by the projecting gusset plates, which is not so good, and there is not the same stiffness in the stanchion to resist accidental eccentricity of load.

Twin beams may also be made to bear along the flanges of the stanchion [fig. 13], and here again we get direct bearing of metal on metal and do not depend so much upon rivets in the stanchion gusset plates to take the load.

Taking the various forms in order of cost, the most expensive section is the solid rolled [fig. 14], as the least radius of such a section is small and sound connections are costly.

Next in order come riveted sections of angles [fig. 15], tee bars, &c. [fig. 16], where again the least radius is small and connections expensive. Single web [fig. 17] sections of plain rolled

steel beams and compounds of beams and plates [fig. 18], in the sizes generally used for stanchions, are good and cheap to connect to.

Sections made of three rolled steel [fig. 19] beams are in some cases found very convenient and have a large least radius. Sufficient space should be provided between the flanges of the beams to allow of machine riveting wherever possible.



FIG. 14.

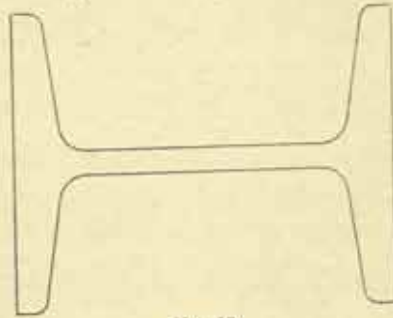


FIG. 17.

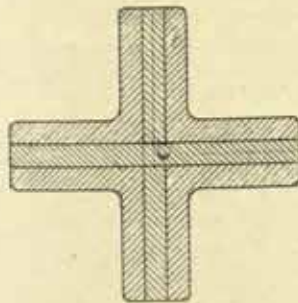
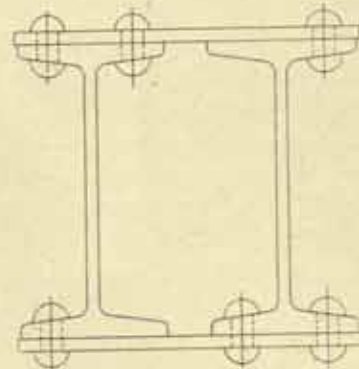


FIG. 15.

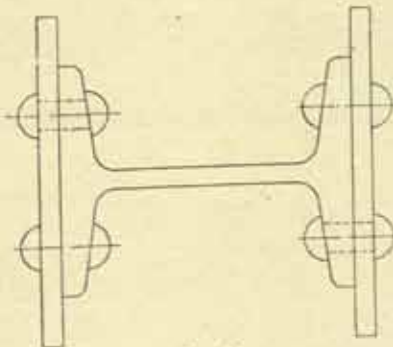


FIG. 18.

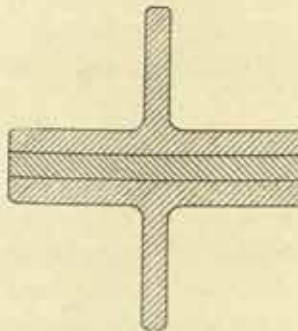


FIG. 16.

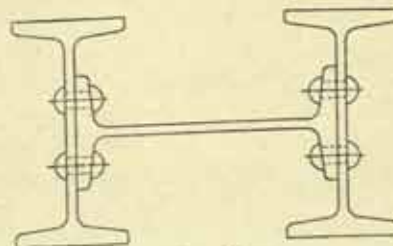


FIG. 19.

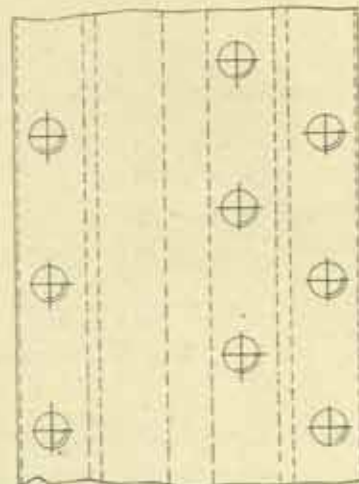


FIG. 20.

The cheapest section generally is made of two R. S. beams with flange plates either in short lengths or continuous riveted on [fig. 20]. Such sections can be arranged with a large least radius, and if the riveting be double in alternate flanges the stanchion is much sounder and stiffer against twisting.

ECCENTRIC LOADS ON STANCHIONS.

Few stanchions are quite free-ended, or pin-ended as it is termed, and no stanchion is exactly centrally loaded and so free from bending stresses. If it were possible to make the shaft of a stanchion absolutely homogeneous and perfectly straight and apply the load on the exact centre, a very slender column could be stressed in compression up to the elastic limit of the material.

But the material we have to deal with in stanchions is mild steel of various sections, varying slightly in density and in hardness, and the bars again vary in thickness and in width.

After rolling, the bars are cut into the required lengths and straightened, then set out, drilled, shaped, and riveted. The resulting product is our stanchion, never absolutely straight or uniform in all respects about its geometrical centre.

The formulæ from which the ultimate loads on struts of various kinds are calculated are derived from the mathematical analysis of the results of a number of tests made by various experimenters. These formulæ vary within certain limits, and those laid down under the 1909 Act for stanchions fixed at one end are about a fair average, taking into account the conditions obtaining in the construction of steel buildings, see fig. 20A.

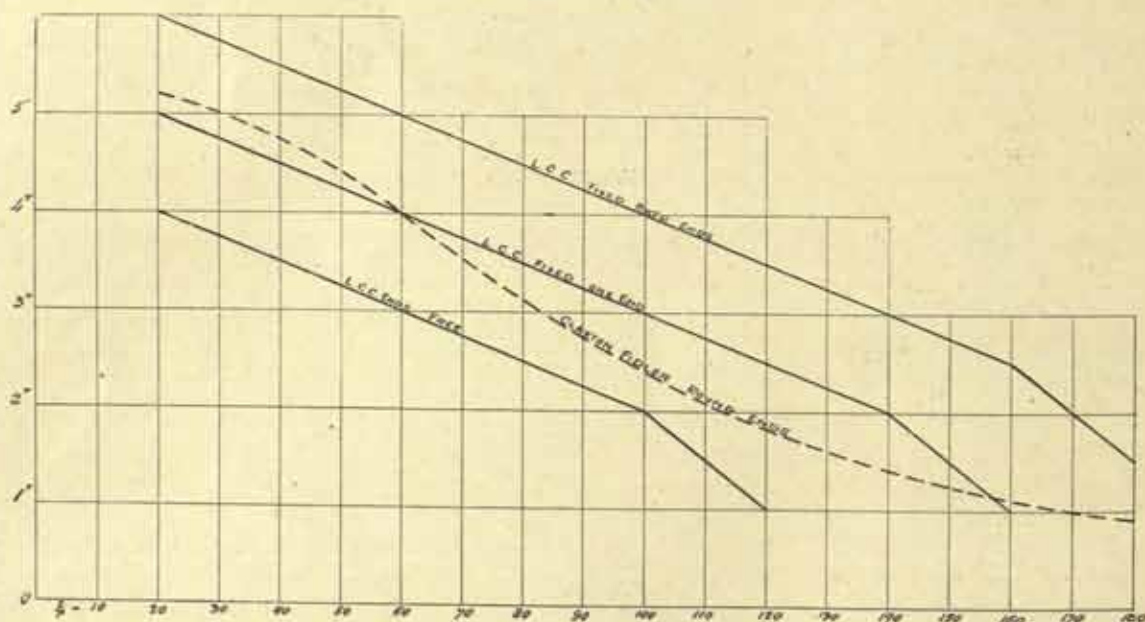


FIG. 20A.—DIAGRAM SHOWING STRESSER ON STANCHIONS.

The limits fixed for stanchions with both ends free are in my opinion altogether too low as there are no absolutely free ends in building work where the general conditions are partial fixing at both ends, equivalent to one end fixed. The bending stresses due to slight inaccuracy in the application of an intended central load on a stanchion, say, one-tenth to one-eighth of an inch out of the straight, are practically negligible. But when we have unbalanced loads supported on a bracket whose centre is 5 inches to 6 inches or more from the centre of the stanchion, as often occurs, the stress in the shaft becomes considerable. Take for instance a 9 inch by 7 inch standard beam carrying a load of 20 tons on a bracket riveted to one flange. The bending moment will be, say, 20 tons by 5 inches=100 inch tons. The modulus of the section being 51 square inches:

The bending stress on the shaft is $\frac{100}{51} = 1.9$ tons per square inch.

If the permissible stress on the stanchion for the length in question be 3.0 tons per square inch, the maximum stress is

Due to bending	1.9 tons per square inch
„ to load	1.18 „ „
	3.08 tons per square inch

The average compressive stress is at the same time only $1\frac{1}{2}$ tons per square inch; but this does not comply with the Act.

If the Act had allowed a little margin for eccentric load, say 1 ton per square inch on the maximum stress, the maximum stress might have been under a load of $26\frac{2}{3}$ tons:

Due to bending, 2.53; due to load, $1.57 = 4$ tons per square inch on the compression side.

On the opposite side of the stanchion the stress would have been

$$\begin{array}{r} + 1.57 \\ - 2.53 \\ \hline - 0.96 \text{ tons} \end{array}$$

The average compressive stress on the shaft would be 2 tons per square inch.

We have here in this stanchion an H beam of which one flange is stressed in compression to 4 tons per square inch and the other flange bears a tensile stress of nearly 1 ton per square inch. Under the provisions of the 1909 Act the same section might be used without lateral support for a span of 30 by 7 inches = 17 feet 6 inches to carry a concentrated load of 27 tons at 14 inches from each support. For a distance of 14 inches from each end the average stress in each flange is $8\frac{2}{3}$ tons. For the central bay of 15 feet 2 inches the maximum stress in each flange, tensile and compressive, is $7\frac{1}{2}$ tons. The length of the compression flange and web is about 110 times the least radius, and the beam is under much the same conditions as if it were acting as a stanchion for a length of 15 feet 2 inches with an eccentric load producing equal tensile and compressive stresses of $7\frac{1}{2}$ tons in either flange. This compares very badly with the limits fixed for the stanchions.

I do not for a moment contend that it is right to use beams stressed up to $7\frac{1}{2}$ tons for a laterally unsupported length of thirty times the width of the compression flange, but I am of opinion that a further margin of stress might very properly have been allowed for the eccentric loading of stanchions.

The case seems particularly hard when in a sound stiff stanchion section, loaded as sketch [fig. 20b], the stress at the extreme corner of one flange is found to exceed by a minute quantity the stress fixed by the Act, whilst all the rest of the sections, probably ninety-nine hundredths of the whole, is within and mostly far below that stress. It is impossible for an area of possibly one-quarter of a square inch stressed to 6 tons to buckle a stanchion of 50 square inches with an average compressive stress of 5 tons.

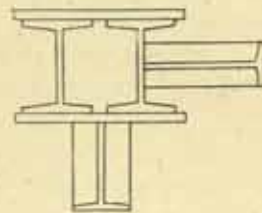


FIG. 20b.

RIVETING AND BOLTING.

Where the conditions admit of sound work, riveting is undoubtedly the best form of connecting the various parts of the structure. But before riveting it is absolutely essential that all the parts should be tightly bolted up so that the various parts are in exact contact before the rivets are driven. If this be not done, of the rivets in a group, the tendency is for those last put in to loosen those first driven.

But where rivets cannot be readily and speedily inserted and headed, good sound bolts are to be preferred. This is especially the case where we have only one hole in a cleat, as it is very difficult and often impossible to get that cleat tight against the plate to which it is to be connected.

Where bolts are used in the finished work the thread of the bolt should be kept clear of the holes in the plates and angles, so that a solid bearing on the shank of the bolt may be obtained [fig. 21].

The thread of the bolt is cut on the solid shank and rounded off at the external angles so

that in the first place the screwed part of the bolt is smaller in diameter than the shank and so does not fill the hole so well. In a bolt one inch diameter the thread or screwed part of the bolt is about one-tenth of an inch smaller in diameter than the solid shank. Again, the bearing area on the edges of the screw thread is extremely small, and this and the small diameter of the thread will result in excessive movement when once the resistance due to friction is overcome.

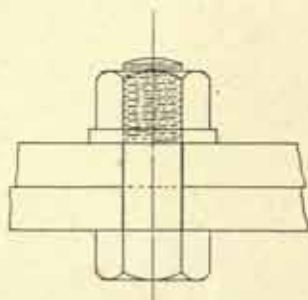


FIG. 21.

The usual length for screwing of bolts is twice the thickness of the nut, so that with stock bolts there is usually from half an inch to an inch of screw thread in the hole in the plates or bars connected. Bolting up requires considerable care, especially when there are several bolts in a group. The bolts in such a case have to be tried over with the spanner again and again to make sure that all are up, as each bolt screwed up brings the plates, &c., into closer contact and the earlier bolts put in are slacked off.

TURNED BOLTS.

Turned bolts of good quality make excellent work in skilled hands. The holes should be bored to an exact fit and the bolts should be well oiled and twisted in, and backed up by a light hammer. If the bolts be very tight a slight burr or fin is turned up on the shank as the bolt is worked into the hole. So that this burr may not get under the head and keep the bolt from being fully driven up, a small groove is cut round the shank of the bolt under the head so that the fin may turn down into this. The thread of the bolt should, of course, be kept clear of the hole.

Turned bolts are sometimes used to connect steelwork where the noise of riveting is objected to, but I have known at least one case where the turned bolts were so tight a fit that hammers had to be used freely and the noise was quite as bad as hand riveting and more protracted.

Turned bolts should have turned shanks, and not be black bolts skimmed up and ground bright as is sometimes done. These last are generally under size and not round.

RIVETS AND BEARING AREA.

Under the 1909 Act the bearing area of mild steel is fixed at 11 tons per square inch, that is to say, that if the pressure of one piece of mild steel upon another is 11 tons, the area of the surfaces in contact must be not less than one square inch. This is about the average practice.

In riveted work the bearing pressure of the rivet on the plate is naturally governed by this regulation, so that with a rivet 1 inch diameter connecting two $\frac{7}{16}$ -inch plates in single shear as fig. 22, we have the shear $\cdot 7854$ by $5\frac{1}{2}=4\cdot 3$ tons. Bearing value, 11 by $\frac{7}{16}$ square inches = 4·8 tons.

But when the rivet is in what is called double shear, as fig. 23, we should have in the ordinary way, shear, 2 by 4·3 tons = 8·6 tons; bearing value $\frac{7}{16}$ -inch by 11 tons = 9·6 tons; but we are not allowed to apply the rule here for bearing area and shear, but an arbitrary limit has been imposed under the Act, fixing the shear on the rivet in these conditions to one and three-quarter times the same rivet in single shear. One cannot see the reason for this.

The single shear connection of the simplest kind under extreme stress tends to take the form in fig. 24, bending the bars connected, and pulling at the rivet heads.

The double shear connection on the other hand will always keep straight under a pull and the riveting is stressed under the best possible conditions.

If we have to design a girder to carry a given load and find that our riveting at one and

three-quarter times the single shear is not sufficient, but that twice the single shear would be ample for our purpose, we may comply with all the requirements of the Act by constructing the web of two $\frac{3}{8}$ -inch plates instead of one $\frac{3}{4}$ -inch plate, though I cannot say that this would be an improvement in the design [see figs. 25 and 26].

RIVETS IN GUSSET PLATES ON STANCHIONS [fig. 27].

The provision for this seems excessive. When the shaft of the stanchion comes directly over the grillage beams, the load from these grillage beams is carried direct through solid metal and rivets seem unnecessary, except to take the reaction from those members of the grillage

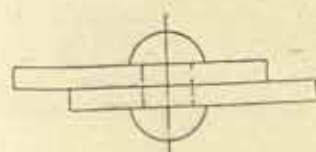


FIG. 22.

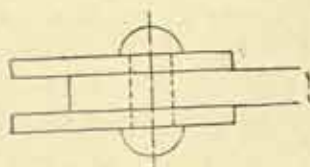


FIG. 23.

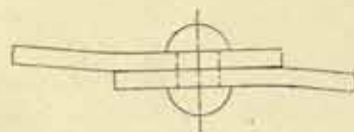


FIG. 24.



FIG. 25.

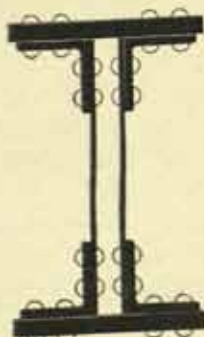


FIG. 26.

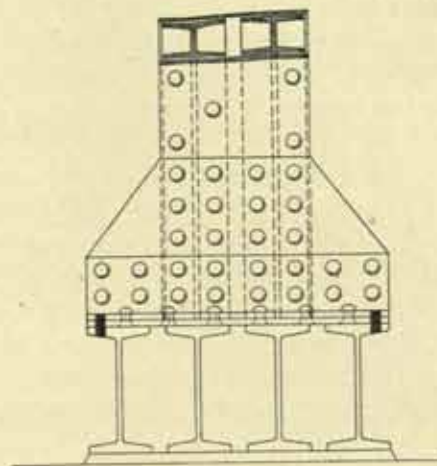


FIG. 27.

which lie entirely outside the stanchion shaft and must be carried by the gusset plates only. This clause may have been taken from American practice, where, I understand, the end of the stanchion shaft is kept clear of the base plate, and all the weight must be carried by the end angles and gussets.

RIVETING GENERALLY.

There is a limit to the lengths of rivets which can be used, varying with the diameter. The rivet hole is first drilled $\frac{1}{32}$ inch to $\frac{1}{16}$ inch larger than the nominal diameter of the rivet, and the rivets are made from bars rolled $\frac{1}{32}$ to $\frac{1}{16}$ inch smaller than the nominal diameter. The solid head of the rivet is formed in a machine while the bar is hot, and the shank near the head of the rivet is swelled or increased in diameter by the pressure applied in forming the head. So when the hot rivet is first placed in the hole in the plates, it is a good fit near the head and clear of the sides of the hole for the remainder of its length. To form the second and final head and fill the hole in the plates in heavy work a machine is used, power being supplied usually by hydraulic pressure or by compressed air.

Through ordinary thicknesses of metal it is easy in this way to get sound tight rivets which

fit the hole accurately throughout their length when hot and grip the plates tightly when cooled. But when we get a thickness or grip of 5 to 6 inches in a girder flange the case alters. The amount of metal required to form the head and fill the deep hole increases and has to be provided in the end of the shank standing out to be riveted down. The power required is increased considerably, and great care must be exercised or the machine and the shank will go over sideways and form a bad eccentric bend and will not fill the hole. The holes for riveting in heavy work are usually and best drilled through the various thicknesses at one operation by twist drills so that the hole is quite smooth and true throughout. The parts should, of course, be carefully straightened and bolted together through tacking holes before drilling. The smaller the clearance in the hole, the better the riveting will be, but the usual clearance is $\frac{1}{16}$ inch, though the hole is sometimes drilled $\frac{1}{8}$ inch only larger than the nominal diameter of the finished rivet.

In one case where specially exact and rigid work was required, the holes in the plates were bored with a cylinder drill and the rivets turned in a lathe and made to fit the hole as closely as possible when heated. The result was excellent.

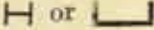

Punching the holes is not to be recommended where the material is thick or where many plates have to be riveted together. Punched holes, always more or less taper, the burr being partly cut and partly burst out by the punch. The rivet, even when well heated and closed with a powerful machine, cannot bear well in such work. The effect of the punching in straining the bar may be seen in the curvature of a long angle bar in which a series of holes of close pitch have been punched.

Hand-riveting should not be used where the machine can be employed. The heads are not so sound and the shanks do not fill the hole so well. Hand-riveting is much slower. The machine will perform the whole operation in a few seconds, whilst the hand-riveters take a full minute from first to last, during which the rivet is touching or surrounded by a mass of cold metal. To appreciate this we should see hand-riveting in frosty weather—how the hot edges of the rivet head turn black at once when they touch the cold plates.

The inspection of hand-riveting should be very close; all rivets should be sounded with a small hammer and the heads carefully examined for signs of caulking, fulling, &c.

BRACING OF BUILDINGS.

Wind bracing in steel buildings has to be provided to take the place of the cross-walls found in other types of buildings, and should be arranged at intervals of 40 feet to 60 feet, according to the depth of the building, the floors acting as horizontal girders carrying the wind-pressure between the planes of the bracing.

The bracing usually takes somewhat the form shown in fig. 28, a pair of the stanchions being connected by horizontal and diagonal bracing to form a steel tower. On the windward leg we have the live and dead loads on the structure as compressive stresses, less the tensile stresses due to the wind. On the lee leg of the tower we have compressive stresses from both vertical loads and from the wind. The braces are usually made of angle bars or of rolled steel  or  sections.

STACKS IN BUILDINGS.

Owing to the great height of modern buildings, where we have sometimes nine floors of rooms above the ground-floor story, stacks of brick flues built in the old way become very heavy, weighing some 200 tons for each double-flue stack.

As these stacks very generally start at the first-floor level this is a considerable dead weight to be carried over the spans of 40 feet or thereabouts—which are now commonly adopted over

ground-floor public rooms. In such a case, we should often have to carry on a beam 40 feet span two stacks each of about 200 tons and two stanchions each of about 250 tons, say, 900 tons in all, or, with the weight of the beam, possibly 1,000 tons. This would call for a heavy girder of a depth not acceptable to the architect or his client.

Radiators are not popular with the general public in this country, and one finds that in bedrooms especially people like to have an open flue in the room. To get over these difficulties electric radiators have been adopted in some cases with ordinary-looking fireplaces, and the flues have been made of thin slabs of light breeze concrete carried on the floor at each level. This effects an enormous saving in space, weight, and cost. In one large hotel building, thousands of pounds have been spent in building and casing some hundreds of brick fireplaces and their flues, and perhaps of all these bedrooms not more than ten have fires lighted at the same time.

ROOF TRUSSES.

These are of many kinds and are made to serve various purposes in addition to supporting the roof and withstanding wind-pressures. They carry trapezes, shafting, and floors, and even form struts to retaining walls.

Roof trusses should be riveted where possible, or put together with tightly fitting black bolts, or with turned bolts where the circumstances warrant the extra cost. Where the stresses vary much or where the roof is open at the sides, all the braces should be made of angle or tee sections, not flat bars.

They should be riveted up at the yard where possible and delivered complete. Large trusses may be made and delivered in sections and riveted upon the site before hoisting.

Roof trusses are usually loaded at the intersections of the braces only, but sometimes the load is distributed along the whole length of the rafter back, which then has to carry as a girder between the braces, being assisted partly by its continuity over those points and partly by the fact that the compressive stress in the back is applied at the gauge line of the bar, which is considerably below the neutral axis of the section as a rule.

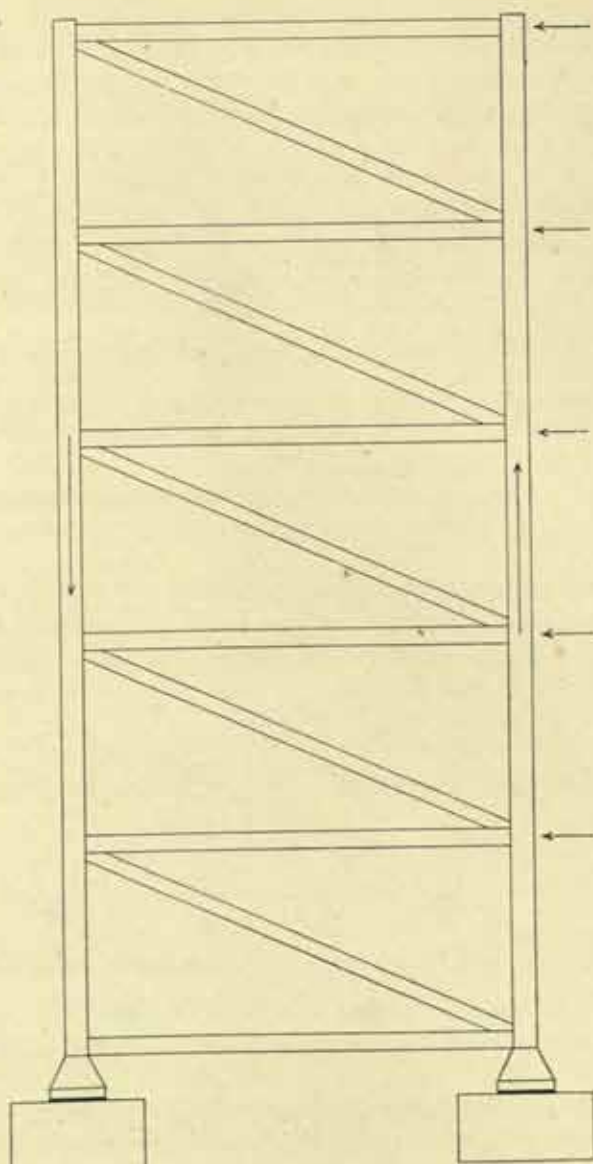


FIG. 28.

TRUSSES WITH CURVED TIES. (Fig. 29.)

In designing these, care should be taken that the lines of stress in the bottom boom keep well within the section. Theoretically, the curve is formed of a number of straight bars, changing

slope at the intersections of the braces, and large trusses are sometimes made in this way ; but it is so much easier and cheaper to bend the bars to a curve that this practice is almost universal. When the truss is loaded the tension in the bottom boom naturally tends to straighten out the curves between the intersections of the braces, and badly designed trusses spread, pushing out

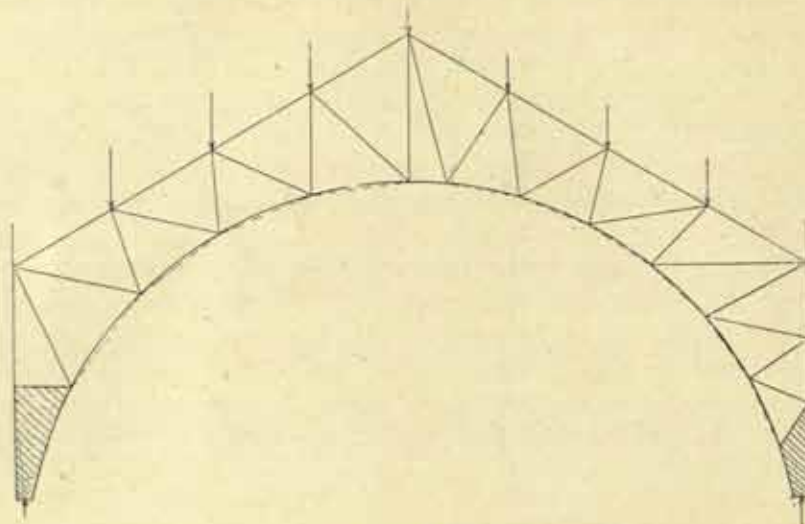


FIG. 29.

the supports, and sometimes causing serious damage. Where this occurs, the roof has to be stripped and additional braces or stiffeners inserted in the truss to help the weak chord.

In the same way the stresses on the angle and tee bars forming struts in the bracing are never applied at the centre of gravity of the cross section, and provision must be made for eccen-

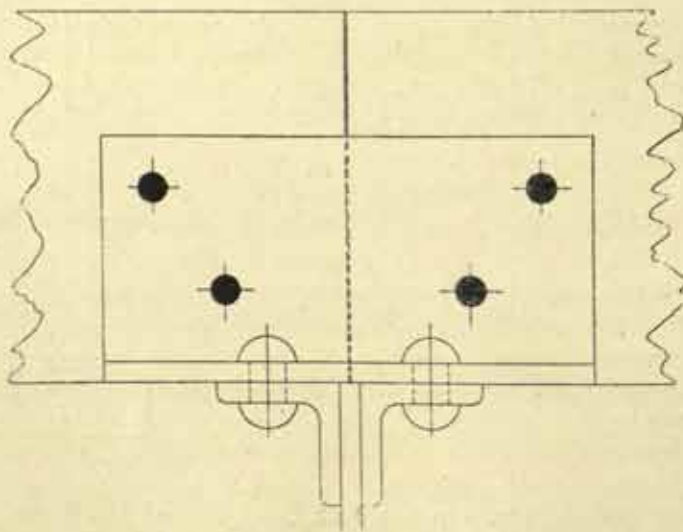


FIG. 30.

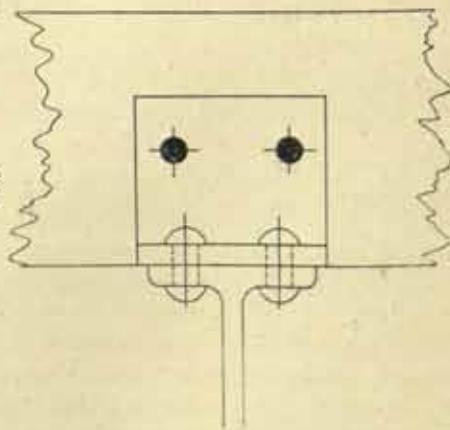


FIG. 31.

tric loading. In struts, sections should be adopted which are equally, or nearly equally, stiff in either direction, and the riveting to the gusset plate may be arranged to stiffen the strut in one direction.

The bracing or stiffening of rafter-backs is, in my opinion, not sufficiently studied. A roof truss is, of course, a trussed beam or girder of great depth, and the width of the compression flange is often not more than 3 to 4 inches for a span of 20 to 30 feet. The section of the compression flange is generally uniform throughout its length, being made sufficient for the highest stress. So we have this very light and leggy truss, often so slight in construction that it has to be stiffened with temporary timber bracing so that it may be hoisted without damage, and the only connection to hold the compression boom straight is a small bolt in a purlin every 7 or 8 feet. It is not surprising that roofs collapse during heavy winds when such construction prevails. The connections to the purlins should be made as rigid as possible, using long cleats and good bolts with large stiff washers (fig. 30). Such a hold is of some real use as bracing, and quite unlike the weak connection, such as fig. 31, often found in such work.

Large roofs should be braced, vertical bracing being inserted between the principals, or the rafters may be braced in the plane of slope. This is especially necessary where the building is open at the sides, and the bracing is of great value in getting the trusses all straight and plumb when erecting.

BOLTING DOWN OF ROOF TRUSSES.

This may be done at one or both ends of the truss. One shoe is bolted down through round bolt-holes and tightly fixed. The other shoe has slotted holes which allow of slight movement if expansion takes place, but the bolting is sufficient to allow of considering the truss fixed at both ends to resist wind-pressure. This is done in roofs of moderate spans only.

In many buildings the pier on one side only is insufficient to stand the total wind-pressure on the wall and truss, and so the pier on the lee side has to be brought into action.

WIND PRESSURE.

Under the 1909 Act an allowance for wind-pressure as a vertical load upon the beams and stanchions must be made of 28 lbs. per superficial foot measured on the slope. The most general slope for roofs in buildings erected under this Act is 75°. With a horizontal wind-pressure of 30 lbs. per square foot the vertical component of this is only 7 lbs.

With 30° slope the vertical component is 17 lbs.

" 40° " " " " 19 lbs.

" 26° " " " " 15 lbs.

So that in most cases we are compelled by the Act to provide for vertical load due to wind about four times as much as can occur.

PRESSURE ON CEMENT CONCRETE.

This is now limited to 12 tons per square foot. We find that 6 to 1 cement concrete made from good average ballast will attain a crushing strength of 72 tons per square foot in three weeks, and will continue to increase in strength.

Concrete in steel-framed building constructions is almost solely used as a foundation for the stanchions and piers where it has to bear any considerable stress, distributing the load from the grillage beams on the earth. The direct pressure on the top of the concrete is usually confined to the central portion of the block, the upper surface for a distance of from 1 foot to 3 feet from the edge being unloaded. It follows that the highly compressed part is surrounded and held by a solid mass of concrete, and can only be displaced by direct crushing. I think it would be found on test that concrete loaded in this way and surrounded by earth would resist an enormous pressure. It seems on the face of it very strange that concrete employed under these highly favourable circumstances should be limited to a working stress of one-sixth of the crushing strength at three weeks, while concrete of similar materials in reinforced beams, where the

maximum stress is on the extreme surface of the beam, may be, and often is, stressed up to 30 to 40 tons per square foot. The tendency in such beams is for the concrete to burst upwards when failure occurs.

BLUE BRICKWORK IN CEMENT.

Good blue brickwork in cement has in the soundest engineering practice been loaded up to 16 tons per square foot. The pressure under the Act is now 12 tons per square foot.

PRESSURE ON EARTH.

The limits on materials of natural formation, which vary very much in density, are liberal, and not in any way to be compared with the very conservative figures laid down for highly manufactured and uniform materials, like tested mild steel, blue bricks and concrete. Few responsible engineers would care to fix the safe pressures on any foundation without examining it.

As to the pressure of 4 tons per square foot on London Blue Clay allowed under the Act, under test at the Tower Bridge works this gave a settlement of $1\frac{1}{2}$ inches, and this settlement continued as the load was gradually increased to $6\frac{1}{2}$ tons. In the test for Charing Cross Bridge, 3 inch settlement resulted from a load of 6 tons per square foot.

SHORING AND UNDERPINNING.

This is a class of work which often comes up in steel construction where alterations are made to existing buildings, and work which requires the greatest care in design and execution.

Temporary timber pillars are usually provided to support the weight where this is of moderate amount, the pillars standing upon timber cills. The cills should be of hard-wood, or hard-wood blocks should be provided under the ends of the pillars to distribute their load over the cills. If this precaution be not taken, heavily loaded timber pillars will sink into the softer side grain of the timber cills.

Needles through walls, under girders, &c., should be of steel and arranged to take a measurable deflection when wedged up. When the calculated deflection is reached and maintained, we may be sure that the load has been taken by the needles, and cutting away may be proceeded with.

Steel planed wedges, well oiled and not too quick in taper, should be used. They are frequently made too short and steep, and are not greased before driving. If great care be not taken with operations of this kind we may easily crack an expensive building from top to bottom, causing damage that can never be made good. I have seen these steel wedges with a taper of as much as 1 inch in 20 inches. One cannot work with such tools.

When inserting new stanchions under existing girders the wedges should be driven up one day and tested again a day or two later if possible, as it is sometimes found that the wedges have slacked out owing to the stanchion foundations taking their bearing. If the wedges be tight and sound, we may be sure that the weight is picked up, and that no settlement is likely to occur. The wedges should then be drilled and bolted and projecting ends cut off.

The work should be examined at each stage, and not left entirely to workmen. I have seen a pier under which it was intended to place a 7 inch diameter solid steel column propped on two 7 inch by 7 inch elm sticks, old stagers, 14 feet long.

Needles are taken out sometimes before the new work under is properly secured. Pillars have sunk into cills and let down and cracked the old walls, and nobody seems to think it anything out of the way.

II. MODERN STEEL CONSTRUCTION: ADMINISTRATION.

By BERNARD DICKSEE [F.].

UNTIL the passing of the Building Act Amendment of 1909 there was practically no legislation or regulations dealing with the iron- and steel-work of buildings. The only provision prior to 1909 was that contained in Section 56 of the Act of 1894 conferring on the District Surveyor power to require, in his discretion, that every breastsummer shall have such additional support as may be sufficient to carry the superstructure.

The provisions of the 1909 Amendment were introduced in order to regulate the construction of "skeleton frame buildings," and are only applicable to buildings of that class of construction. Section 22 provides that "Notwithstanding anything contained in the principal Acts requiring buildings to be enclosed with walls of the thicknesses and of the materials therein respectively described, it shall be lawful to erect, subject to the provisions of this Section, buildings wherein the loads and stresses are transmitted through each storey to the foundations by a skeleton framework of metal, or partly by a skeleton framework of metal and partly by a party-wall or party-walls."

This drafting is somewhat clumsy and confusing, as such buildings have in fact been erected for some years past without special regulation and supervision of the steel-work. Such buildings, however, were required by the Building Act of 1894 to be enclosed by walls of full schedule thickness, although those walls acted solely as enclosures, the loads being carried by the steel frame. Under the 1909 Act these walls may now be of much less thickness, excepting party-walls, which must still be of full schedule thickness.

It will be well to consider the exact application of the 1909 Act, as a difference of opinion has arisen as to what buildings come within the Act. It has been claimed that the Act is an adoptive one; and that, unless advantage be taken of the permission afforded by the Act to build with external walls of less thickness than heretofore, none of the regulations of and restrictions upon the metal framing apply. To accept this view would be to reduce the Act to an absurdity. A builder might produce to the District Surveyor drawings and calculations of a skeleton frame building; upon examination the District Surveyor might find that the loads were in excess of those allowed by the Act; upon the District Surveyor objecting, the builder might reply that, in the circumstances, he would increase the thickness of the walls so as to be of 1894 Act thickness, and would thus get outside the 1909 Act, and build under the 1894 Act only. The effect of this would be to still further load the steel-work, and at the same time to escape the regulations. This question is of such importance that the District Surveyors' Association have thought it advisable to take Counsel's opinion; and they have been advised that such a claim is wrong, but that if, as a fact, the loads and stresses in a building are transmitted through a skeleton framework of metal (with or without party-walls) in the manner described, the whole of the provisions of the 1909 Act apply. In other words, the Act is not adoptive, but compulsory.

It is provided in Section 22 (31) of the Act that:—

"In the case of the erection of a new building of metal skeleton framework, or the making of any addition or alteration or the carrying out of other work under the provisions of this Section, the notice required to be served on the District Surveyor under Sec. 145 of the London Building Act 1894 shall be accompanied (a) in the case of a new building, by plans and sections of sufficient detail to show the construction thereof, together with a copy of the calculations of the loads and stresses to be provided for and particulars of the materials to be used, and, should such plans, sections, calculations or particulars be in the opinion of the District Surveyor not in sufficient

detail, the person depositing the same shall furnish the District Surveyor with such further plans, sections, calculations or particulars as he may reasonably require, and (b) in the case of an alteration or addition or other work as aforesaid, by such plans, sections, calculations and particulars as the District Surveyor may reasonably require."

As it will manifestly be convenient alike for the architect, engineer, and District Surveyor that the calculations shall be submitted on a uniform basis, thus greatly reducing the labour of making and checking the calculations, the District Surveyors' Association approached the Royal Institute upon the subject; and, with the co-operation of the Science Standing Committee, they have drawn up a scheme, upon which I am asked to address you this evening.

As skeleton frame construction owes its introduction to the United States of America, inquiries were first made of the New York Building Authorities, but we were informed that no uniform method of depositing plans and calculations was in existence. We are, however, much indebted to the kind assistance of Mr. Robert W. Gibson of New York, who sent us many valuable suggestions, including some of his calculation sheets and drawings. Many of these suggestions find a place in our scheme.

The main points that presented themselves to us were:—

1. A uniform system of nomenclature.
2. A uniform system of symbols.
3. The drawings to be deposited.
4. Calculation-sheets for a uniform method of submitting calculations.
5. Formulæ suggested for use in calculations.
6. A schedule of assumed weights of materials for use in calculations.
7. Tables of safe load for beams and pillars for ready use.

With regard to nomenclature it is proposed that:

Each pillar, column, or pier or point in a wall at which a load is concentrated should be distinguished on the plans, sections, and pillar-sheets by a distinguishing number indicating its position on the plan, and by a distinguishing letter indicating the floor that it supports.

Every point vertically over or under the numbered point on the plan should be known by the same number and by the quotation of the respective storey-letter.

The numbers should be indicated on the plans and be enclosed within a circle to distinguish them from dimensions, and should as far as possible begin at the left hand of the plan and follow across it in continuous numerical series.

The floors should be distinguished by letters as follows:—A should indicate the floor of the ground or entrance storey, or, where there are two storeys that would answer that description, the floor of the lower of such storeys. B should indicate the floor of the storey next above A (i.e. the "first floor"); C the next above B, and so on. X should indicate the floor of the storey next below A; Y the next below X; Z the next below Y. Thus Pillar 21 E will be situated in the third storey supporting the fourth floor, vertically over Pillar 21 D supporting the third floor, also vertically over Pillar 21 A supporting the ground floor.

Every girder or beam should be distinguished by the quotation of the numbers at its two ends or points of support, and by the distinguishing letter of the floor in which it is situated. The reactions at the ends of the girder or beam should be distinguished by the same numbers. Thus beam 7-8 B will indicate the beam in the floor of the first storey, one end of which is supported on Pillar 7 B and the other on Pillar 8 B; the reactions being denoted by R_7 and R_8 respectively, and carried to Pillars 7 B and 8 B.

This method of denoting the beams and pillars will reduce the chance of error to a minimum; it is almost impossible to carry a load to a wrong pillar.

The Concrete Institute having previously adopted a list of uniform symbols, which are

admirably adapted for general use, these were adopted, a few additions being made to meet the case of terms not required for reinforced concrete.

The method adopted is to take the initial letter of the term for its symbol; this can be done with very little duplication. Small letters are adopted in the case of intensity of loads and stresses; capitals in the case of total loads and stresses. Small letters are employed to indicate inches, capitals to indicate feet.

Section Modulus had to be added to the Concrete Institute list; for this (S having been appropriated for Shear) Z was adopted, and is, I think, already in general use.

Before passing from this subject, may I enter a protest against the misleading, not to say erroneous, use of the term "Moment of Resistance" when "Section Modulus" is meant? Section Modulus

$\left(\frac{I}{y}\right)$ is a mathematical property of the figure of the section only, without any relation to the strength of the material, and is not a "Moment" (which must comprise both force and leverage); whereas the "Moment of Resistance" is the product of the Section Modulus by the extreme fibre stress; and may be equated to the "Bending Moment."

It is requested that the drawings deposited should be either photo reproductions, with black lines on white paper (ordinary blue prints are objectionable), or tracings on linen.

A complete set of $\frac{1}{4}$ -inch scale working drawings showing all the steel construction with properly figured dimensions is asked for, with all the pillars and beams clearly numbered and lettered according to the aforementioned scheme of nomenclature.

But, if desired, the steel-work may be shown upon a separate set of drawings to accompany the ordinary working drawings. Details of the steel-work will also be required.

We now come to the important question of the calculations. The calculations for pillars, for beams and girders, and for foundations should be tabulated upon separate sheets or schedules, on the forms published for that purpose. These forms are of a convenient size—i.e. foolscap—and are upon thin paper, which has the advantage of limiting the bulk of a set of calculations, and also of enabling sketches to be inserted by tracing.

Pillar-sheet.—The calculations for each pillar, for the full number of storeys through which that pillar passes, should be tabulated upon a separate pillar-sheet or set of sheets.

The sheet should be headed with the identifying number of the pillar, and the material to be employed, on the left hand; the name or identification of the building in the middle; and the identifying numbers of exactly similar pillars, on the right hand.

The sheet is divided into three panels extending horizontally across the page, each of which panels is to contain the calculations for the portion of the pillar within the limits of one storey; the calculations of each storey being placed in the panel that represents the actual position in the building of that storey, the topmost storey being at the head of the page, and the lowermost at the foot. Where the page does not contain a sufficient number of panels for all the storeys of the building (and that will be the case where the building extends to more than three storeys) the calculations are to be carried forward and continued on to an additional page in the same order, all the pages of one pillar-sheet being carefully attached to each other.

The pillar-sheet is divided into vertical columns, as follows. The first eight columns contain details of loads, &c., and the remaining three columns the results arrived at:—

Col. 1.—To contain the distinguishing letter of the storey, and the height of that storey.

Col. 2.—The particulars of loading set out in detail, collecting the reactions from the various beams, keeping dead and superimposed loads distinct so as to provide for the allowed discount from the superimposed loads.

Cols. 3 and 4.—The amount of the loads described in Col. 2, axial and eccentric loads being kept distinct in Cols. 3 and 4 respectively.

Col. 5.—The totals of the loads from Cols. 3 and 4, showing the total loads for that storey only.

Col. 6.—The total loads from Col. 5 collected storey by storey, showing the total loads (dead and superimposed) down to the level of the floor of the storey.

Cols. 7 and 8.—The arm of eccentricity of loading in two directions normal to each other, having reference to the eccentric loads set out in Col. 4.

Col. 9.—Sketch, approximately to scale (upon the axes shown), of the pillar section decided upon, with dimensions and thicknesses.

Col. 10.—The properties necessary for calculations of the section decided upon, only those actually required being inserted.

Col. 11.—Calculations of the maximum stress due to axial and eccentric loading (where necessary, in two directions normal to each other), and a statement of the maximum permissible load according to the table set out in Section 22 (21).

In making these calculations the pillars should be taken as "one end fixed and one end hinged." Only in cases where special means have been adopted to secure fixing may the pillar be taken as with "both ends fixed."

In the pillar-sheet no provision has been made for any additional working stress upon a pillar at the leeward side of a building due to wind-pressure, as by Section 22 (21) no extra allowance need be made for this extra stress where it does not exceed 25 per cent. of the permissible stress according to the table. An excess equal to this will rarely be produced upon buildings in London; it is therefore thought best not to complicate unnecessarily the pillar-sheet. Where this extra stress becomes a factor to be dealt with, an additional calculation may be made on an additional attached sheet, and the result entered upon the sheet in Col. 2, and carried forward in the totals.

All loads on the pillars should be expressed in tons and decimal of a ton.

Beam-sheet.—The calculations for each series of girders or beams situated vertically over each other and with their ends supported on the same two pillars, and therefore bearing the same distinctive end-numbers, should be tabulated upon a beam-sheet in a similar manner as the respective pillar-sheets. Each series of beams with different end-numbers should be upon a separate beam-sheet.

The sheet should be headed with the identifying number of the beam, the material to be employed and the width of span on the left hand; the name or identification of the building in the middle, and the identifying numbers of exactly similar beams on the right hand.

The sheet is divided into panels extending horizontally across the page, each of which panels is to contain the calculations for one beam or girder in the series. The storey in which the beam or girder is situated should be indicated on the sheet similarly to the corresponding storey on the pillar-sheet.

When the page does not contain a sufficient number of panels for all the storeys, the calculations are to be continued on to an additional page in the same order, all the pages of one beam-sheet being carefully attached to each other and numbered consecutively.

The beam-sheets are in two forms :—(a) To be used in cases where by reason of the application of concentrated loads or for other reasons a special calculation is required; (b) To be used only in cases where the load is uniformly distributed, and the beam may be selected by reference to the annexed tables of calculated safe loads for standard sections.

Beam-sheet (a) is divided into vertical columns as follows :—

Col. 1.—To contain the distinguishing letter for the storey, and the height of the storey.

Col. 2.—The particulars of the loading set out in detail, giving dimensions, weights, &c., for each item of the loading, whether walls, floors, or other beams.

Cols. 3 and 4.—The amount of the loads referred to in Col. 2 (uniformly distributed and

concentrated loads being kept distinct in Cols. 3 and 4 respectively), with the totals at the foot of the panel.

Col. 5.—A letter distinguishing the point of concentration of the load.

Col. 6.—(a) A diagram of the beam showing: Uniformly distributed loads (dead and superimposed loads being kept distinct); the points of application and the amounts of concentrated loads (distinguished by the corresponding letter in Col. 5 and by figured dimensions); the span of the beam, the points of reaction distinguished by their proper numbers according to the nomenclature; where the circumstances of the loading render it desirable, a diagram of the moments, set up to scale on the floor-line.

(b) A sketch of the section of the beam employed, with dimensions and thicknesses.

Cols. 7, 8, 9.—The reactions, showing in Col. 7 whether the load is distributed or concentrated, and if the latter the distinguishing letter identifying the loads as in Cols. 5 and 6; in Cols. 8 and 9 the consequent reactions of these loads at each end of the beam, distinguished by its proper number. The reactions due to dead and to superimposed loads are to be kept distinct in order to facilitate transference to the pillar-sheets (where an allowance may have to be made in the case of superimposed loads). These reactions should be summed up separately, and the totals of both inserted at the foot.

In the case of buildings of the warehouse class, where no reduction of the superimposed loads is allowed, the reactions due to dead and superimposed loads need not be kept distinct.

Col. 10.—The Maximum Bending Moments resulting from the various loads indicated in Col. 7, and the total Bending Moment in the beam.

Col. 11.—The properties necessary for the calculation of the section decided upon.

Col. 12.—The maximum stresses in the beam resulting from the loading, which stresses must not exceed those allowed in Section 22 (22).

It may here be remarked that the Maximum Bending Moment due to the whole system of loading will not necessarily be the total of the various Maximum Bending Moments due to the individual loads. In fact, it can only be so in the case of a load concentrated at the centre of the beam; in all other cases it will be something less than the total of the various Bending Moments, due to the fact that each Maximum Bending Moment occurs at a different point in the span.

The labour of calculation for beams variously loaded, when Beam-sheet (a) is employed, may frequently be simplified and the calculations made without recourse to the properties in Col. 11, by ascertaining the Equivalent Distributed Load that would produce the same Maximum Bending Moment as that produced by the several combined loads, concentrated and distributed. This can be done by an inversion of the formula

$$B = \frac{WL}{8};$$

i.e. Equivalent Distributed Load

$$= \frac{8 B}{L}.$$

Having ascertained the Equivalent Distributed Load, a reference to the Tables of Safe Uniformly Distributed Loads attached to the scheme will at once show the section necessary to carry safely the load over the given span.

Beam-sheet (b) is divided into vertical columns as follows:—

Col. 1.—To contain the distinguishing letter for the storey and the height of the storey.

Col. 2.—The particulars of the loading set out in detail.

Col. 3.—The amount of the loads referred to in Col. 2, with the totals at the foot of the panel.

Cols. 4 and 5.—The reaction at each end of the beam, distinguished by its proper number;

the reactions due to dead and to superimposed loads being kept distinct, and the total loads inserted at the foot of the panel.

Col. 6.—The dimensions and weight per foot run of the section selected.

Col. 7.—The safe load according to the annexed tables for the section selected and the stated span.

The loads on beams and reactions should be expressed in tons and decimals of a ton.

The scheme also contains a Foundation-Sheet, which needs only a passing reference.

Roofs should be dealt with by means of reciprocal diagrams of the stresses in the trusses, shown to a convenient scale, accompanied by tables of results.

Calculations for all members for which special calculation-sheets are not mentioned should be shown upon additional sheets, in such detail as circumstances may require. This will include lopsided loading of beams and girders, gusset plates and brackets, bracing, and connections generally.

A number of Formulae that it is suggested should be employed in making the calculations are included. Some of these are elementary, but it was thought desirable that these should be comprehensive, so that all should work on a uniform basis. The formula for eccentrically loaded pillars will perhaps be the most valuable. As all buildings should be sufficiently braced to ensure that there shall be no material deflection in the pillars, this formula has been adopted in preference to the more complicated one necessary in cases where material deflection occurs.

Not the least useful part of the Scheme will be the carefully worked-out tables of safe loads, in accordance with the limits of stress allowed under the Act, for beams and pillars. The extreme fibre stress allowed for steel ($7\frac{1}{2}$ tons per square inch) considerably simplifies the labour of calculation. It will be observed on reference to Tables 1 and 2 that the coefficient WL works out at exactly five times the Section Modulus. Thus, having ascertained the Section Modulus, it is only necessary to multiply by 5 and divide by the span in feet to ascertain the safe distributed load in tons.

Tables 1 and 2 (Beams) have been worked out for simple standard sections of joists and channels; should compound sections be necessary, reference may be made to similar tables for compound girders in the handbooks published by Messrs. Dorman & Long, and the Cargo Fleet Iron Co., in both of which books the calculations have been made on the same basis of $7\frac{1}{2}$ tons per square inch.

Table 4 (Stanchions and Pillars) has been worked out upon the middle column of the table of working stresses contained in Section 22 (21) a; there described as one end hinged and one end fixed. This is the middle position between free ends and fixed ends, and it was agreed between the District Surveyors' Association and the Science Committee that this was the table applicable to ordinary practice. Up to $\frac{l}{r} = 140$ it may be expressed in tons as, Safe load = $5\frac{1}{2} - \frac{1}{40} \cdot \frac{l}{r}$; or in pounds, Safe load = $12,320 - 56 \frac{l}{r}$. It approximates to, but is about half a ton safer than, the American formula of $13,500 - 57 \frac{l}{r}$.

This table has been calculated for such of the standard sections as are at all suitable for use as stanchions, and does not attempt to deal with compound sections. The handbooks before referred to contain extensive calculations for compound stanchions, but unfortunately they are not available for the purposes of calculations under the Act of 1909, as they are calculated on a different basis from that required by the Act.

Table 3 gives the values of $\frac{l}{r}$ for various heights and radii of gyration.

Table 5 gives the maximum shearing and bearing values in single and double shear for rivets and bolts of various diameters and various thicknesses of plates.

In conclusion, may I express the hope that the scheme that it is my privilege to bring before you to-day may prove to be of considerable use to the members of the Institute? May I also express the hope that it will be universally adopted for all buildings to be erected under the Act of 1909, as such adoption will help to lighten the enormous amount of labour that, for a very inadequate remuneration, has been thrown by that Act on the District Surveyor?

[Discussion adjourned to Monday 28th April.]

VOTE OF THANKS.

The President, Mr. REGINALD BLOMFIELD, A.R.A., in the Chair.

MR. ALAN E. MUNBY, M.A. Cantab. [A.], Chairman of the Science Standing Committee, in proposing a vote of thanks, said that the suggestion of the subjects of these valuable Papers emanated from the Science Committee, the matter having been discussed by them more than a year ago, which enhanced his pleasure in rising to express the thanks of the meeting to the Authors. They all knew Mr. Jackson and Mr. Dicksee. Mr. Jackson, as an Honorary Associate, possessed one of the highest honours which the Institute could give. He had served the Institute in various ways on the Science Committee; and he, as the Chairman, could personally say that he had served it very well indeed, and had given them most valuable advice on many technical points. They hoped to see him again on the Committee. They knew him also as a designer who could even start with the roof of a building, and finish at the ground. Mr. Dicksee had also served on the Science Committee for some time, and those who knew the District Surveyors' Association could appreciate what he had done for that body. He could imagine that these Papers had left various effects upon different people. He noticed a friend near him who had a look of utter desolation, others who could appreciate the calculations probably had a feeling of elation, and there was at least one Fellow with a feeling of aggression, which he would probably shortly put into operation. He himself was not nearly so competent to deal with the points in the Papers as many other speakers, and it would not be fair for him to take up their time, as the hour was so unusually advanced and the discussion promised to be most interesting. He would therefore content himself by proposing a very hearty vote of thanks to Mr. Jackson and Mr. Dicksee

for the great trouble they had taken, and for the excellent and useful information they had put before the Meeting.

MR. W. G. PERKINS seconded, it being understood that he would reserve his remarks on the subject of the Papers for the adjourned Meeting to be held on the 28th.

THE PRESIDENT said they had had a tremendous doing that evening, and it was getting late. As he listened to the relentless and implacable science of Mr. Jackson and Mr. Dicksee he did not know where he was; and he began to think that possibly, as a brilliant Professor recently said, all their studies in Gothic and Classic and other things had been as waste paper, and they ought to have devoted those years of laborious effort to the study of steel construction. He should not, however, throw up the sponge so readily. Nor would he detain them with any remarks that evening, because he felt that there was a tremendous lot which had been said in the Papers that required thorough discussion by competent men. Therefore it had been suggested that it would be desirable to adjourn this meeting and discussion, for the subject was of vital importance, and affected the future of architecture very closely. In putting the vote of thanks he need hardly say that Mr. Jackson's and Mr. Dicksee's Papers had been up to the highest standard of papers which they had learned to expect in the Institute; and when they were published, they should look to them with the greatest interest, and to the discussion which followed, as authoritative on this subject.

The vote of thanks was carried by acclamation and briefly responded to, and the discussion was adjourned to Monday, 28th April.

THE TEMPLE OF EZEKIEL.

By G. S. AITKEN, Architect (Edinburgh).

THE following illustrated interpretation of the Prophet Ezekiel's Visionary Temple is the result of a professional study of Syrian architecture undertaken in connection with a course of lectures given in the Heriot-Watt College, Edinburgh, some years ago.

The author's theory is new, and quite opposed to those of past commentators, who, unable to regard the subject from the technical standpoint of the architect, could not reasonably be expected to resolve its difficulties.

Of the various exegetical authorities referred to in the course of his analysis, the author begins with that under the article "Temple" in Dr. Hastings' *Biblical Dictionary*, referring afterwards to the corresponding article in the *Encyclopædia Biblica*, and, as occasion requires, to the views of different authors who have commented on the vision. For convenience of reference the two works will be alluded to as *H. B. D.* and *E. B.* respectively.

The inspired account of the Visionary Temple is given in chapters xl., xli., xlii., xliii., and xlv. of Ezekiel's prophecy.

In chapter xl. the prophet is represented as being led by his guide to the east side of the Temple enclosing wall. The first measurement taken is of the outer walls, which are found to be 6 cubits in height and breadth.

The outer threshold of the east gate is 6 cubits long; beyond this are guard-rooms or lodges, three on each side, 6 cubits square, divided from one another by massive walls, 5 cubits thick, with a screen or "boundary fence" in front, 1 cubit thick, of the nature of a parapet, with an entrance in the middle; beyond them is a second threshold, 6 cubits long, and outside this a porch 10 cubits wide and 13 cubits long externally, its threshold 6 cubits long with ingoings of 2 cubits (chapter xl. verses 8, 9, 11).

The 5-cubit dimensions between the guard-rooms seem excessive, but, although we are not to suppose the plan was copied from any Assyrian work, we know that the intermediate walls of one of the Khorsabad gates were similarly massive. They were reduced in thickness by the windows, which the sixteenth verse of the same chapter tells us were placed in the "posts" of the chambers; these windows would probably have recesses with seats for the use of the guards, like those we find in the mediæval castles of our own country.

The expression "door against door," accompanying the statement of width in verse 13, implies that the 25-cubit dimension was limited

to the gateway, which had doors, excluding the porch which had none. The thickness of the north and south walls, after allowing for a passage equal in width to the length of the thresholds, is $2\frac{1}{2}$ cubits.

The length of the gate inclusive of porch (verse 15) was 50 cubits; the east and west walls of the guard-room portion will be found, after deducting the size of the porch and the other dimensions already given, to be 6 cubits thick.

In the fourteenth verse is mentioned the measurement that fixes the projections of the gate in relation to the enclosing walls, and, as will be afterwards seen, the ultimate form and dimensions of the entire enclosure. Hitherto, Ezekiel had been describing linear measurements, but now the expression "post of the court round about the gate" may be taken to imply that the prophet's companion made a girth measurement from the post of the court on one side right round the gate to the post of the court on the other side, of 60 cubits. By deducting the girth of the porch, which is 45 cubits (see author's plan from A to B), from this 60 cubits, 15 remain, or $7\frac{1}{2}$ cubits for each shoulder.

Much ingenuity has been employed in interpreting the meaning of this passage. Dr. Keil propounds the very singular arrangement of lofty pillars, 60 cubits high and 2 cubits square, as flanking each side of the porches, and justifies this inference by the opinion of Kliefoth, who thought that as obelisks, minarets, and factory chimneys rest on a narrow base, so there was nothing unreasonable in applying this conjecture to the Temple.

H. B. D.'s commentary on the passage is: "Kliefoth followed by Heng, Keil, Schröder (Lange), Perrot and Chipiez and others, defend the text as it stands. The two 'posts' at the end of the porch were like church steeples—so says Kliefoth; and it was such gate pillars that suggested our church steeples. But the 'posts' in question formed no part of the sanctuary as church steeples usually do, unless, indeed, Kliefoth was thinking of the campanile or bell-tower churches, such as are to be seen at Chichester, &c. It is far more sensible to amend the text with the aid of the LXX and to read 'and he measured the porch 20 cubits,' that is, in breadth."

But the acceptance of the figure 20 does not settle the point, as the porch cannot by any method of calculation consistent with the text be made to turn out 20 cubits broad. Verse 9 says: "then measured he the porch of the gate 8 cubits and the posts thereof 2 cubits," or 10 cubits altogether;

this is repeated in verse 11 where the other or breadth measurement of the porch is given as 13 cubits. The porch was therefore 13 by 10 cubits according to the Revised Version.

The guard-rooms were lit by trellised windows without any glass (many exquisite examples of such are to be seen in the East at the present day), and there were also similar windows in the porch, the term "arches" in verse 16 being translated by Professor Davidson "to the porch thereof."

Ezekiel is now led from the porch to the outer court, when, looking to the right and left, he saw along the inside of the east wall thirty chambers, or, in other words, a colonnade divided into thirty recesses abutting on the shoulders of the porch. Though not mentioned, it may be supposed there were similar colonnades against the north and south walls.

Professor Davidson, in his *Cambridge Bible*, infers from chapter xlii. verse 6, presumably from the expression "they had not pillars as the pillars of the courts," that these chambers were of several stories; but it is not likely there were storied buildings at the outer wall, intercepting the view of the Temple from the outside; the expression more probably refers to the pillars of the chambers surrounding the Temple.

The next step was to measure the "space from the forefront of the lower gate to the forefront of the inner court without,"—this was 100 cubits (verse 19)—and it is followed in verse 23 by an apparently irreconcilable measurement of 100 cubits from gate to gate. If we take the nineteenth verse to mean that the forefront of the outer gate is its eastern front, so making that gate project entirely within the wall, and measure from it 100 cubits to the east side or forefront of the inner court, and suppose that the 100 cubits in the twenty-third verse is not a *vis-à-vis* measurement, but one from the eastern face of the one gate to the eastern face of the other, we comply with both conditions, with this result that all the three inner gates meet each other, and leave no room for the altar in the central court.

Benzinger's plan, *H. B. D.*, meets the difficulty by forming an intermediate court, which, receiving all these inwardly projecting gates, leaves a clear central court of 100 cubits; but this plan has the objection that the eastern exit from the priests' chambers, described in chapter xlii. 9, would not open into the outer court according to the requirement of the passage. Nor again would the little altars be in the outer court as described in chapter xl. verses 40, 41, but in the intermediate court. Besides, if the inner court of the altar was the priests', to what use was this extra court put? for at that time there were none of the after-distinctions of Priests, Israelites, and Gentiles, for whom separate courts had to be provided; while in any case Ezekiel makes mention of only outer and inner courts. And, moreover, the surveillance

exercised by the inner guard-rooms over this intermediate court, with its area of 26,000 cubits, would be disproportionate to the control of the three outer guard-rooms over the outer court which had an area of about 200,000 cubits.

We assume, therefore, as the only arrangement meeting all the conditions of the text, an outer court 100 cubits wide, and a distance of 100 cubits from the exterior of one porch to the exterior of that opposite.

As the outer porch, according to our interpretation of the fourteenth verse, projects $7\frac{1}{2}$ cubits into the outer court, this makes the inner porch project $2\frac{1}{2}$ cubits into the inner court. The latter dimension provides for the architectural necessity of separating the porch corners from the surface of the adjoining wall.

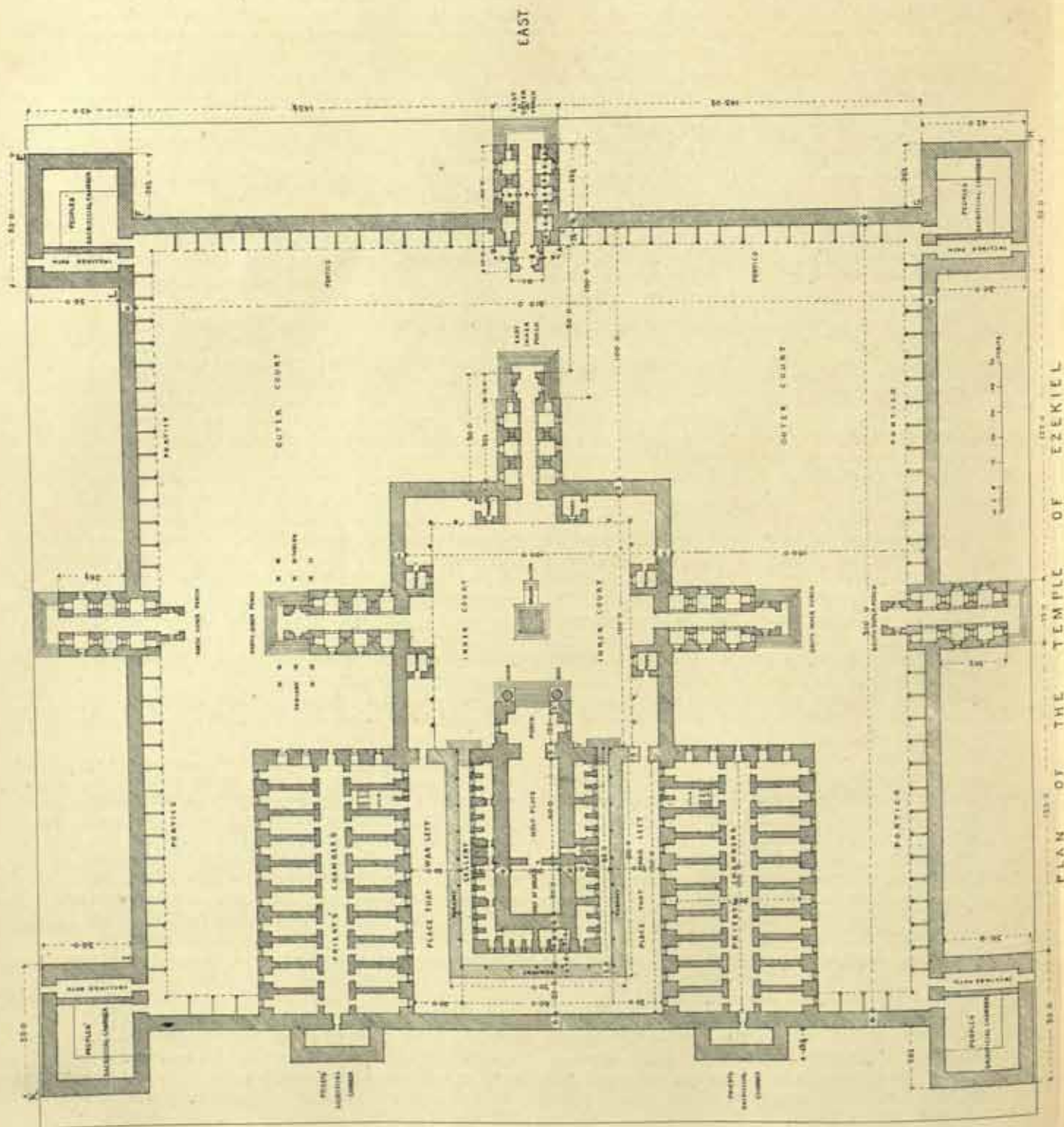
The theory of the outwardly projecting gates is confirmed by the reference in verse 18 to "the pavement by the side [or shoulder] of the gates," "even the lower pavement." In the *H. B. D.* plan this lower pavement has been shown as inside, and next to the enclosing wall, with the obvious disadvantage of serving as a canal in the wet season. In the author's plan, such a pavement "by the side of the gates over against the length of the gates" would not have such a defect, and might very properly be designated a lower pavement, because it was lower than that of the outer court. The Ezekiel Temple was not an isolated building in the open country with its containing walls rising at once from the natural surface of the ground, but, according to the later chapters of the prophecy, was in the centre of a complex of enclosures, and therefore requiring such a pavement as a means of adaptation to its surroundings.

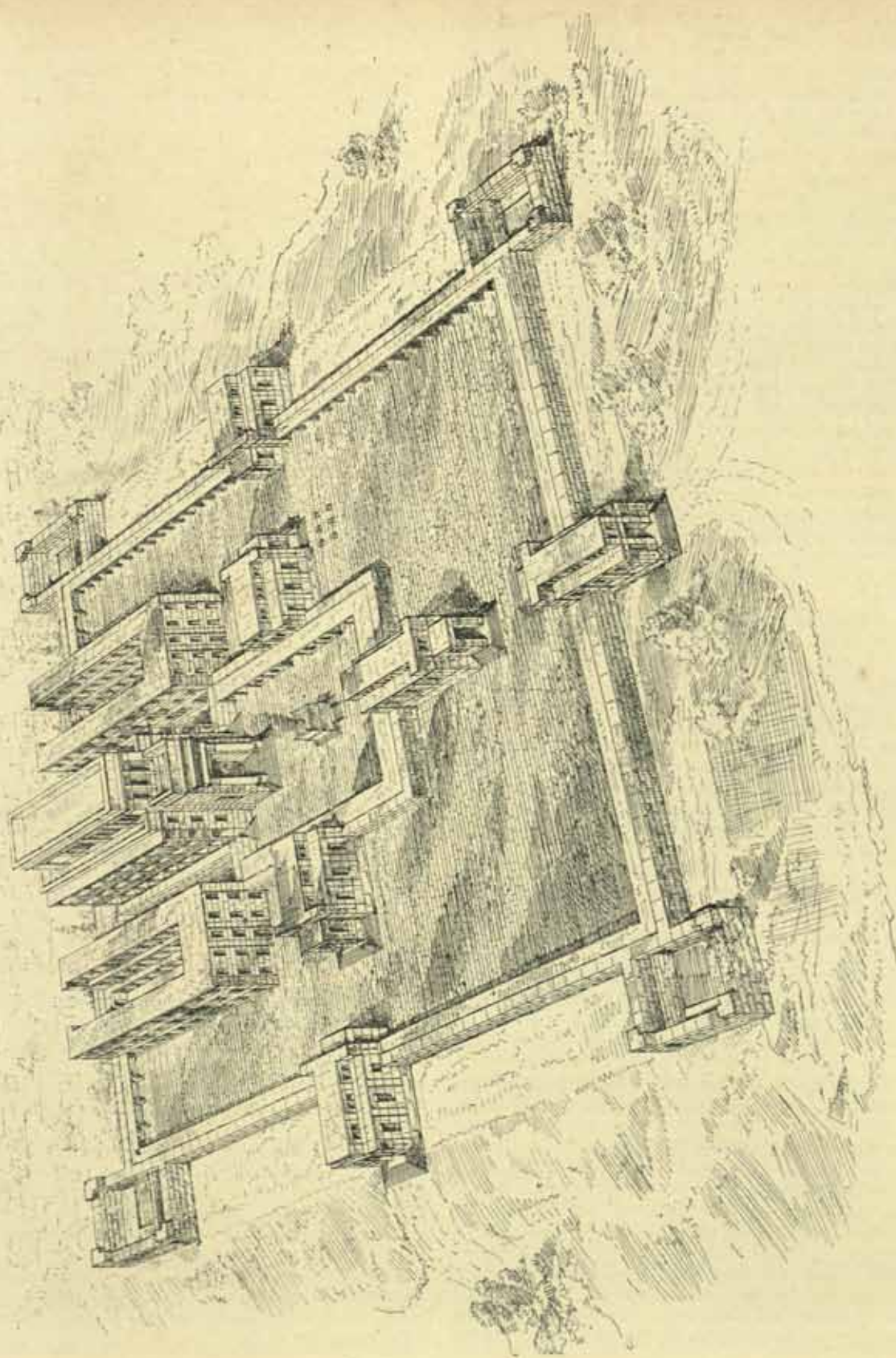
Ezekiel and his companion next examine the north and south external gates, which agreed in all respects with the eastern gate.

They now measure the south, east, and north inner gates, and these are seen to be similar in form and dimensions to the outer gates, but their porches were turned outwards to face the porches of the outer gates, according to the passages in verses 31 and 34 "and the arches (porch) thereof were towards the outer court," and also in accordance with the passage in chapter xli. 2, where we read that the Prince on the Sabbaths and New Moons was to "enter by the way of the porch of that gate without, and shall stand by the post of the gate," "and he shall worship at the threshold of the gate."

All the inner gates were ascended to by eight steps, the outer gates by seven, and together these two flights likely had some symbolical relation to the fifteen Psalms of Degrees.

In the thirtieth verse is a reference to arches 25 cubits long and 5 cubits broad; this verse is omitted in the Septuagint, and Dr. Davidson thinks it "may have arisen from an inaccurate repetition of the measurements given in previous verse."





ISOMETRICAL VIEW OF THE TEMPLE OF EZEKIEL

But taking Dr. Keil's translation of the word "arches" as meaning "wall projections," and admitting for the present purpose the genuineness of the passage, we suggest that it may refer to some architectural frontage on the gate which returned with equal distinction on each side for a space of 5 cubits, and this, we submit, may have been a parapet on the front part of the gateway with a return of 5 cubits at each end; such a detail would give dignity and completeness to the gate façade.

This idea is introduced in the accompanying view, and the result, in conjunction with the clerestory, is the figure of a "Tau" cross, always used in representations of Moses holding up the brazen serpent. While it may be going too far to assert intentional symbolism in this unexpected figure, it furnishes a very interesting coincidence in its appropriateness in a Temple erected to carry on the worship of the God of Israel according to the Mosaic Ritual.

In verse 47 the size of the inner court is given as 100 cubits square, and allusion is made to the great altar which stood in the centre. The Temple was on the west side of the court, and the prophet is now led to it, and makes record of the dimensions given him.

Beginning with the porch on the east side, we are told (Ezek. xl. 48, 49) that it was 20 cubits long by 11 cubits broad (the LXX gives 12), its walls 5 cubits thick, and as the piers or posts of the entrance were internally 3 cubits broad each, this left 14 cubits for the width of the opening; on the outside of these piers were pillars, very probably those known in the earlier Temple as "Jachin" and "Boaz." The porch was lit by windows on each side (chapter xli. verse 26), and was ascended to by the steps, as the Septuagint renders verse 49, chapter xl.

In chapter xli. begins the measurement of the Temple itself. The entrance door is mentioned in the second verse as 10 cubits wide, and the jambs on each side 5 cubits each, thus making up the 20 cubits of width. The posts or thickness of the east wall are 6 cubits (verse 1), corresponding, as we note in the fifth verse, with the thickness of the remaining walls of the Temple. After measuring a length of 40 and a breadth of 20 cubits as the size of the "Holy Place" (verse 2), Ezekiel and his guide reach the veil of the "Holy of Holies"; its thickness is mentioned as 2 cubits, the door 6 cubits, and the jambs 7 cubits wide (verse 3), so between them making up the Temple width of 20 cubits.

The "Holy of Holies" is mentioned as 20 cubits square (verse 4). The measurement of 4 cubits as the width of the chambers surrounding the Temple seems very narrow, but it would be increased by the window recesses formed in the outer wall which was 5 cubits thick. The chambers were three stories in height, ten on each floor and thirty in number altogether. The ninth verse gives 5 cubits as the breadth of the wall or terrace all

round in front of the chambers, and its height is alluded to in the previous verse as a full reed, or 6 cubits above the inner court.

It will be noted that nothing is said of the altitude of the Temple, or of the other buildings, the only instance in which heights are given being those of this terrace and of the main enclosing wall of the outer court.

The tenth verse gives the width of "the place that was left" between the 5-cubit ambulatory and the enclosing court wall as 20 cubits. *H. B. D.*'s plan continues the "place that was left" round the porch and omits it at the west end; but this arrangement is incorrect, as the passage reads "the breadth of the place that was left was 5 cubits round about," that is, round about the chambers, not round the porch; besides, the architectural effect of the porch standing on such a platform would be unpleasant; but this objection could not apply to the chamber platform, because by supporting columns connected with the galleries above, it had evident continuity of outline which the porch with such a base could not have.

The twelfth verse alludes to a building at the front of the separate place at the west as 70 cubits broad and 90 cubits long, with its walls 5 cubits thick. *H. B. D.* quotes an opinion as to its use in the following words: "Kliefoth and Keil hold that the 'binyan' (or enclosed space) was made for the purpose of receiving the oil of the sacrifices and the sweepings of the gates." While recording this opinion, *H. B. D.* does not apparently approve of it, and rather haltingly remarks: "It is very probable that by the 'binyan' we are to understand the same as the passage in 2 Kings xxiii. 11, as a place where horses and chariots were kept; and in 1 Chronicles xxvi. 18 (a part of the temple, west of the house of which the priests had the charge)." But we suggest that the dimensions 90, 70, and 5 cubits simply refer to the ambulatory parapet on the two sides and west end of the Temple, which on the author's plan is exactly of these sizes, and that there was therefore no such area west of the Temple at all.

The accuracy of this interpretation is borne out by the words in the next verse, "so he measured the house an hundred cubits long, and the separate place and the building with the walls thereof an hundred cubits long," a repetition of former measurements which makes no allusion to any such large area, as it would surely have done in the *résumé* had such a space existed. And besides it is very unlikely the Mosaic Ritual would permit the presence of such an extensive insanitary enclosure within the precincts of the Temple.

The 100 cubits of the thirteenth verse given as the length measurement of the Temple is the exact product of the figures marked on the author's plan, if we accept the emendation of 12 cubits given by the LXX instead of the 11 of the Revised Version (chapter xl. verse 49).

The sixteenth verse alludes to windows: these must have been the lights to the "Holy Place" rising above the roofs of the porch and chambers in clerestory form.

The twenty-fifth verse refers to thick beams of wood placed on the outside of the porch, very probably as a cornice to the two brazen columns mentioned in chapter xl. verse 49, and protected from the weather by a covering of gold, for it is hardly likely the columns stood in isolation as assumed by the late Mr. Fergusson, who wrote so ably on the Jewish Temple.

Chapter xlii. begins with the description of a group of three-story chambers which stood in the outer court opposite the Temple buildings, coinciding in length with the 100 cubits of the north side of the Temple court, and extending from that side northwards 50 cubits into the outer court. They were for the use of the priests, who went there after duty in the Temple court to change their official garments, ere they passed in among the people into the outer court; and also as a place for depositing the "meat," the "sin," and the "trespass" offerings. The priests were not allowed to go direct to the outer court (chapter xlii. verse 14), and therefore a door was provided from the inner court to the chambers (verse 2) through which the prophet went from the "inner" court, the LXX so translating the word "outer" in the first verse.

Inside he sees a walk of 10 cubits broad by 100 cubits long (the figure 1 in verse 4 should be 100 according to Professor Davidson), with an exit at the east end to the outer court (verse 9), and an entrance also at the west end to the Priests' Sacrificial Kitchens (chapter xli. verses 19, 20). When the priests needed to go on duty into the outer court, the eastern door would allow them to pass at once into it.

The chambers were on the east, north, and south sides of the block, so that the priests would be screened from the gaze of the worshippers in the outer court as they went to and fro their rooms. The upper rooms were approached by galleries, which, not being supported on pillars like those of the Temple, receded at every story, so that the rooms on the middle floor would be about 4 cubits narrower than those on the ground level; and the rooms on the third story correspondingly narrower than those on the middle stage. The stairs to them would be conveniently situated near the eastern door and the door into the inner court.

The chambers of the south side (verses 10, 11, 12) corresponded with those on the north side. It will be noticed on the author's plan that the ground floor of the two chamber blocks is sunk below the level of the inner court, so that the priests would have only a few steps of ascent to reach the middle tier of rooms which were little above the level of the inner court.

The measurements of the buildings within the

Temple courts being completed, Ezekiel is brought through the eastern gate to the outside of the enclosing north, south, east, and west walls, which are measured in his presence and found to be 500 reeds, or, as corrected by the LXX, 500 cubits each.

To meet this statement *H. B. D.* represents the Temple area as enclosed with a straight-lined wall, which, unbroken in outline, necessarily leads to so large an internal area as to require a greater number of courts than the inspired record allows.

The author's plan, on the other hand, measuring round the broken outline which is obtained by adding the porches already described and the "Peoples' Sacrificial Kitchens," 40 by 30 cubits internally (chapter xli. verse 22) or (adding thickness of wall) 52 cubits by 42 cubits externally, secures the desired dimension of 500 cubits for each side, the Priests' Kitchens (chapter xli. verses 19, 20) being substituted on the west side for the porches of the other three sides.

Another problem, more related to the Solomonic than the Ezekiel Temple, which has excited much attention and is partially referred to in the *E. B.*, page 4935, vol. iv., concerns the columns and their capitals. According to the statement in 1 Kings vii. 15 and Jeremiah liii. 21, the shafts were 18 cubits long. In 2 Chronicles iii. 15, they are said to have been 35 cubits, and the capitals in all the other instances 5 cubits high. They were 4 cubits in diameter, as we learn from the expression in 1 Kings vii. 15, "a line of twelve cubits did compass them about." The verse in 2 Chronicles clearly refers to the united length of the two shafts without their bases; in this way, we may reconcile all the dimensions of length in the three passages cited. They were with their capitals 23 cubits high, and therefore $5\frac{1}{2}$ diameters in proportion of diameter to height, and so rather approaching the vigour of the Grecian Doric column than the grace of the Corinthian.

The capitals were bowl-like in form (1 Kings vii. 41), apparently resembling some of the later, Byzantine capitals, and these bowls were covered with net or lattice work; and as the net work, being 4 cubits or so high, would present a monotonous surface, it was relieved by seven rows of wreathed chain work. The summits of the capitals had "pommels," or what we may understand as some kind of volute, provided to carry the plan outline of the capital bell from the circle to the square. From each of these pommels were suspended, after the manner of a festoon, two rows of pomegranates, one hundred in each row, or, according to the description in Jeremiah lii. 23, ninety-six towards the four winds—in other words, that number on each face, leaving four over on each festoon for suspension from the pommels. This combination of details is reasonable, and would form a capital in harmony with the sturdiness of the shafts and possibly full of symbolism.

The position of the columns in relation to the

porch has been the subject of much discussion, and, although the theories propounded have their application rather to Herod's Temple than to Solomon's, they have an interest in our present consideration to this extent, that the pillars of the late Temple were survivors of the earlier. The late Mr. Fergusson, author of several important works on Architecture, maintained that they were incorporated with a series of lintels after the form of the Sanchi Tope in India, and that on these lintels was hung the sacred vine; this piece of construction he placed outside the Temple in the same isolated position as the Japanese Torii. This idea Mr. Fergusson takes from, or finds confirmation of, in the Talmudic statement that the porch had five carved oak beams or lintels with stones in between, and that these beams increased in length from the lowest to the highest—that is to say, each beam was longer than the one below it by 2 cubits, so that the top beam would be 8 cubits longer than the bottom one. An objection to Mr. Fergusson's theory of isolation occurs in the reference to intermediate stones, which, appropriate enough in a structure placed against the Temple walls, would be out of place in one standing alone. An alternative to this is that the columns might have been supports to the porch lintel; and that this is not shut out of consideration is seen by the passage in 1 Kings vii. 19, from which we learn that the columns were set up *within* the porch; this being so, the use of a series of wood lintels with stones between could be understood, as they would cover the void of the porch opening, on the same principle as the five separate courses of stone placed over the chamber of the Great Pyramid relieved it of the dead pressure of the superincumbent mass. Plated with metal, these wood lintels would resemble a crown on the summit of the pillars, somewhat like a stone which surmounts the lintel of a Temple at Baal-Zimmon. This assumed application of gold would help to explain a statement of Josephus, that the front of the Temple shone from afar with the reflection of the gold which covered it.

A late writer, M. Chipiez, the learned French author of several architectural works, conjointly with M. Perrot, assumes the columns to have stood alone, and considers this assumption strengthened by the collateral evidence furnished through the discovery of a fragment of sepulchral glass, which was found in 1882 on the Labican way near Rome, and which it is supposed was due to a Hebrew colony in Rome that flourished there in the end of the third and the beginning of the fourth century A.D. On this fragment is represented a view of a temple with isolated columns standing at each side of it. The temple is localised by the representation of palm-trees, and by a view of the seven-branched

candlestick below it. This picture is supposed to be a Jewish reminiscence of the ancient Temple of their fathers, and, if that be so, it would go far to support his theory that the columns stood alone and in advance of the porch, in a position similar to the obelisks which were so invariable an accompaniment of the Egyptian pylon. The French author goes on to give most elaborate drawings of one of the columns, of which all that need be said is that they are French in treatment, and remind one of the practice of some of the early painters, who, in their ignorance of Eastern costume and scenery, represented sacred objects amidst the accessories of their own people and country. On the whole, it will be preferable to suppose that the columns were on the outside, immediately against the wall.

There is a matter of incongruity in *H. B. D.* (page 702) commentary on the passage in 1 Kings vi. 36, and with an effort to confute this our remarks must close. The text reads thus: "And he built the inner court with three rows of hewn stone and a row of cedar beams." *H. B. D.* explains that this means a wall of three courses of stone, finished with a coping of cedar, weathered to throw off the water. But why should a stone wall have a coping of a material so much less durable than itself? Would the upper course of stone not have been better as a coping? And, besides, to provide a wood coping two or more cedar planks would have been needed. The breadth of the wall was probably 5 cubits, or 7 feet 6 inches, and the largest cedar in Solomon's days would likely be no bigger than the trees Dr. Thomson describes in his *Land and the Book* as attaining the circumference of 41 feet, dividing into two or three stems at the height of a few feet from the ground. How could these planks be joined together so as to be watertight? Dr. Keil thinks they stood upright like a railing, but this seems an undignified method of fencing when metal was available.

The proper resolution of the difficulty is, we believe, to be found by interpreting the passage as meaning that the north, south, and west sides of the Temple chambers had each a row of hewn stones (three rows of hewed stones) as a pathway projecting from the chambers, and that on these rows rested the wood pillars mistakenly supposed to have been copings which supported the gallery beams, these in their turn carrying the passages of approach to the chambers.

It may be added that it is very unlikely that the rooms were entered by passing from one into another as *H. B. D.* plan shows; this would entirely destroy their privacy as places of abode for the priests.

REVIEWS.

ENGLISH MEDIEVAL SCULPTURE.

An Account of Medieval Figure Sculpture in England: With 856 photographs. By Edward S. Prior, M.A., F.S.A. [F.], Slade Professor of Fine Art in the University of Cambridge, and Arthur Gardner, M.A., F.S.A. 40. Cantab. 1912. £3 3s. net. [Cambridge University Press, Fetter Lane, E.C.]

No one can take up a work which has on its title-page the name of Professor Prior without an expectation that all available data of the subject selected will have received the most thorough investigation, nor without confidence that every conclusion arrived at will be based on the most profound and reliable consideration of the premisses. In the present case Professor Prior and Mr. Gardner have more than fulfilled every possible expectation. The book which they have given us is not only the first attempt at a systematised history of English Medieval sculpture, but it will doubtless remain for many years the principal authority on this extremely complicated and interesting subject.

The task which M. Emile Mâle undertook when he produced, ten years ago, his work on the religious art of the thirteenth century in France was, we venture to think, a far easier one. It is, indeed, true that the Gallic lucidity of M. Mâle's method makes it difficult to realise the laborious preparation which must have formed the foundation of the logical system which he sets before us. But it is also true that the body of French sculpture which is available for study is at once sufficient as regards its quantity, and complete enough as regards its logical arrangement and development, to make its interpretation comparatively simple when once the master key of its symbolic intention has been discovered.

Very different is the case of English sculpture; even before the iconoclasm of the sixteenth and seventeenth centuries had done its work we doubt if it would have been an easy task to interpret and systematise as a whole the symbolic intention of English Medieval sculpture. The confused mass of disconnected fragments that now remain are in themselves almost beyond classification; it is a matter of wonder that any one should have had the courage to attempt it, and of still greater wonder that it should have proved possible to put together so remarkable a co-ordination of the results of an almost infinite capacity of accurate observation as is presented by the volume before us.

The ordered mass of sculpture on the façades of the great churches of Amiens, Rheims, Paris, and Chartres is as complete, or nearly so, as it was in the thirteenth century. The general lines of interpretation were indicated by Mr. Ruskin some forty years ago. The system of interpretation was carried further, and, indeed, reduced to logical completion, by M. Mâle; it was based upon a study of the sermons and other literature of the thirteenth

century, a study of the books which were read and of the sermons which were doubtless actually heard by the men who carved the figures and bas-reliefs which are clearly shown by M. Mâle to be their direct interpretation.

The only churches in England comparable to the French churches in the quantity and quality of their sculpture are those of Exeter and Wells. The Wells sculpture is thought by the authors to be as early as the corresponding French work, if not earlier, but in both cases the preservation is far less complete, and in neither case was the symbolism realised to the same extent as in France. It is hardly too much to say that, without French sculpture as a guide, the interpretation of English sculpture would have been almost impossible: even with its help the result must be comparatively uncertain and fragmentary.

An actual instance may make this clear. The imagery of the west front at Amiens is arranged as follows:—The central porch contains the figure of Christ, surrounded by the twelve Apostles; the south porch, the Blessed Virgin with S. Elizabeth, S. Simeon and S. Gabriel, and other figures illustrating her history. The north door is devoted to a group of local saints and martyrs; the front of the buttresses between the porches, to a series of prophets who foretold Christ. Above, in the tympanum of the three porches, the life of S. Firmin, the Last Judgment, the death and burial of the Blessed Virgin; in the voussours the hosts of heaven; and above again, in the arcade immediately under the towers, the kings of Judah, the ancestors of Christ; and lastly, underneath, on the plinth, the Zodiac and the corresponding labours of the seasons; the virtues and vices, and a number of historical scenes and incidents—a complete and logically ordered picture of Medieval thought, which can be classified, as M. Mâle classifies them for us, under the four heads of the Mirror of Nature, the Mirror of Science, the Mirror of Morals, and the Mirror of History.

A very similar and not less complete arrangement of sculpture is to be found at Rheims, at Paris (restored and largely modern), and at Chartres. In each case the arrangement is so clear and logical that it is possible without much difficulty to identify every figure. This is seldom possible in England. Only fragments of such an ordered scheme can be identified here and there. Messrs. Prior and Gardner are able, indeed, to identify at Peterborough and Wells and Exeter, Apostles, kings and ladies, the Messengers and ancestry of Christ. At Wells, Professor Lethaby has been able to discover a scheme of imagery approaching in its grandeur and completeness those of the great French churches; while here and there all over the country are to be found isolated examples of zodiacs, judgments or dooms, resurrections and coronations, and various historical episodes.

In the present work, however, a point of view

more fully treated than that of the interpretation of the subject-matter is that of craftsmanship, and the originals and classification of the various schools and methods of imagers and masons. This most difficult subject is treated with extreme thoroughness, and it is difficult to realise how any two men can have found time to acquire such intimate knowledge of so large a number of examples of sculpture as to be able to present an orderly classification of what are, at first sight, isolated and disconnected fragments.

Nothing in the whole work is more interesting than the disentangling of the various sources to which the varying characteristics of, for instance, the early and late Romanesque sculpture in England are to be attributed. Continental influence in the South, and Irish and Scandinavian influence in the North and Midlands in Saxon times, and, later on, a more clearly indicated French influence which came through Poitou and perhaps through Santiago de Compostella, are followed out with considerable detail; while the classification of the several schools of masonry and sculpture which came into existence in the twelfth and thirteenth centuries is of the greatest interest.

The book is very amply illustrated with more than eight hundred photographic prints.

ARTHUR S. DIXON [F.].

CORRESPONDENCE.

Book-names for Building-work.

15th April 1913.

To the Editor, JOURNAL R.I.B.A.,—

DEAR SIR,—My friend Mr. Walter Millard in the JOURNAL, 8th March, p. 311, voices the opinion of many students of "Gothic" (may I use the word Gothic?) as to the desirability of giving up sectional names like "Early English," "Decorated," and "Perpendicular." I cannot prove them to be wrong if they wish to do so, but I think it would be a pity. I remember that a wish to "discriminate the periods" gave an interest to my early reading, and I don't think I should have attached the general characteristics of an ever-changing process so readily (it was difficult at best) to mere dates. Surely it would be generally allowed that in all "arts and sciences" (generally so called) names help. There are no bears and swans in the "heavens," but it is probable that the retention of the old names for the "constellations" (there are no constellations of course in fact) has a practical value. It is possible that our first day of "summer" may be colder than the last day of "winter," but, notwithstanding, it is convenient to have distinct names for the continuously changing "seasons" (so called). Where are we to end in giving up convenient labels?

Another friend of mine, Prof. Moore, thinks that

we "English" (are we English?) are wrong in applying the word Gothic to our "Medieval" (when did the Medieval period begin and end?) "architecture"; must we agree? One argument for giving up the sectional labels is brought forward; this is that the French get on very well without such nicknames. It is perfectly true, but a moment's reflection suggests that the modern nation of France was not in the middle ages a single homogeneous kingdom. The same "styles" (what are styles?) did not run from Provence to Flanders and from Savoy to Brittany. In England the styles marched very well together from corner to corner. Besides, the French may do as they like. It is my view that after a hundred years of printing stuff about English architecture a general notion is getting about that twelfth-century architecture was "Norman," that what is called "Early English" was developed in the thirteenth, the "Decorated" came in the fourteenth, and the "Perpendicular" followed in the fifteenth century. I believe it would not be wise now to repudiate the results of endless writing and infinite speech. For myself I confess that I quite spontaneously think of such a porch as "Norman" and such a window as "Perpendicular." For others there is no right or wrong in the matter: it is only a question of convenience.

I foresee that in a few years we shall only be able to write on "architecture" at all by putting every third word in quotes, as no one will accept any of the names in current use.

W. R. LETHABY [F.].

Colour Decoration.

14th April 1913.

To the Editor, JOURNAL R.I.B.A.,—

SIR,—I suppose that an author should always take any criticism "lying down"; but where his meaning is distorted by words inserted by the critic, he is apt to kick.

I have to thank Mr. Ibberson for many appreciative remarks on my book on *Colour Decoration*, but why does he ask "can one altogether agree with this, of the much abused easel picture?" and then quote a passage in which I am speaking exclusively of *mural paintings*, painted with the object of beautifying a building—not of pictures hung up in it? The word "easel" is his own insertion. I am not wanting in admiration for easel pictures, but I am not talking of them. I am discussing decoration. His three Vandyke portraits may be sold at Christie's and go perhaps to America—I am discussing what are loosely called "frescoes"; but as that word indicates a *method*, I did not use it.

As to imitations, I am all for the real thing; but so long as architects build sham columns of plaster to conceal iron stanchions, or to obtain "dignified effect," why try to foist all the lie on to the

decorator who tries to make the best of the original untruth? Who is most to blame—the architect who built cement pilasters as responds to granite columns, or the decorator who saw what the architect meant, and did it?

And in a humbler matter, where is the architect who never specifies for the servants' rooms, "woodwork, three coats *stone colour*"?

Alas, it is a wicked world!

J. D. CRACE [*Hon. A.*].

Mr. Ibberson, to whom a proof of the above was sent, replies:—

21st April 1913.

In case I have failed to make my meaning clear to others, may I reply in the JOURNAL to Mr. Crace's gently given kick?

I certainly dragged in "easel" wrongly and unnecessarily; the word is not needed for my point that three balanced Vandyke portraits, "painted on the wall," like Browning's duchess, might be "decorative" even though surrounded by a definite gold frame or border. Possibly Mr. Crace would admit that the effect was "beautiful" and we are but kicking against the words?

In vicarious humbleness I admit that the architect of the "Fitzbilly" sinned: a granite column really should not have had a plaster respond! (It was putting too great a temptation in the way of the painter).

But even architects, poor slaves of material things, must not lie down always, and I proceed to adopt the erect posture of dogmatism. Plaster pilasters are legitimate when the columns are plaster too; the simplest of us knows they are not plaster all through, and whether there is stone behind as sometimes at Pompeii, or brick as in Georgian times, or reinforced concrete as now, there is no real deception. The columns after Mr. Crace had worked his wicked will would I expect deceive the angels.

In conclusion, I must again resume a recumbent position and plead guilty to using "stone colour" on my kitchen doors. I do not think the cook is deceived, but should I at any time have the pleasure of building for Mr. Crace, I will remember the risk of this apparently innocent habit deluding more sophisticated minds, and will specify instead, in the words of another decorator, "All the colours of the rainbow including black and gold."

HERBERT G. IBBERSON [*F.*].

Books Received.

London County Council—Survey of London. The Parish of Chelsea (Part II.), being the fourth volume of the Survey of London, by Walter H. Godfrey, member of the Committee for the Survey of the Memorials of Greater London. 40. Lond. 1913. Price 15s. 9d. Published by the London County Council, Spring Gardens.

The Country Life Book of Cottages, costing from £150 to £600. By Lawrence Weaver. 80. Lond. 1913. Price 5s. net. [Country Life Office, 20 Tavistock Street, Covent Garden, W.C.]



9 CONDUIT STREET, LONDON, W., 26th April 1913.

CHRONICLE.

The late William Flockhart [*F.*].

The formal announcement to the Institute of the death of Mr. William Flockhart was made by Mr. E. GUY DAWBER, acting for the Hon. Secretary, at the General Meeting of the 21st inst., in the following terms: I deeply regret to announce the decease on the 10th inst. of our distinguished Fellow and Member of Council, William Flockhart. Mr. Flockhart was elected a Fellow in 1901, and had always taken an active share in the work of the Institute. He had been seven times elected Member of the Council, and in that capacity had served for three years on the Finance Committee, acting for a time as its Chairman. He was also for several years a member, and for the past two years Vice-Chairman, of the Art Standing Committee. Mr. Flockhart's artistic gifts are well-known to members. He has left his mark especially on our West End architecture in a number of charming buildings, business premises and private houses, in Bond Street, Hill Street, and elsewhere in this neighbourhood. As architect to the Union Castle Steamship Company he made the designs for the remodelling, furnishing, and decoration of the Royal quarters on the *Balmoral Castle* for the voyage of the Duke of Connaught and suite in 1910. He was one of the architects selected by the London County Council to submit designs for the façades of buildings fronting the Strand and Aldwych, and he received the second premium awarded in that competition. He was also among the nine architects nominated to take part in the final competition for the Wesleyan Church House, and one of the eight selected to submit designs in the final competition for the new London County Hall. I need not on this occasion deal more fully with his professional works—these will doubtless be set out at length in the Memoir to appear in our JOURNAL. We have to-night to deplore the loss of a good and sincere friend of the Institute. Mr. Flockhart was an able and brilliant architect; he was, moreover, a competent critic, tolerant and broad-minded, and a passionate lover of the arts. He had a most lovable disposition, and was of a peculiarly winning personality. Those of us who enjoyed his

acquaintanceship know how charming a companion he was, and we all regarded him as a friend. I have to move the following resolution: "That the Institute desires to record its deep regret at the decease of our esteemed and distinguished Fellow and Member of Council, William Flockhart, and at the loss which the Institute and Architecture have sustained thereby; and that a message of condolence be transmitted on behalf of the Institute to his widow and family, sympathising with them in their great bereavement."

MR. GEORGE HUBBARD, F.S.A. [F.]: May I be permitted to second this vote of condolence on the loss of our friend, Mr. Flockhart? I think he must have been known to all of us in this room, and all who knew him must have respected him, not only as an architect, but as a man. I had to meet him professionally on more than one occasion, sometimes as an opponent, and it would have been impossible to have dealings with a man of a more generous or a sweeter disposition. While loyally supporting his own case, he would be most considerate of the views held by others. It is with extreme regret that we have heard of his death, and we shall always mourn his loss.

THE PRESIDENT: In putting this vote of condolence I should like to say how deeply and sincerely we all sympathise with Mr. Flockhart's family. Mr. Flockhart was one of the most delightful of men, and possessed of great charm and originality, as well as a very individual outlook on things. He was also an artist of considerable power, and a brilliant draughtsman. On his services to this Institute I need not dwell; we all know he was most constant in his attendance and in his efforts to help us in every way. He was a loyal colleague, a man with a very candid and open mind, always anxious to get at the facts, and always sincere in his efforts to do his best in the interests of architecture.

The motion having been put from the Chair, the Meeting rose and signified its assent upstanding.

Collaboration of Architect, Sculptor, and Painter.

During the year just past the Committee on Allied Arts of the American Institute of Architects have been engaged investigating conditions existing among architects, sculptors, and painters in connection with their collaborative work. The Committee was organised on democratic lines, each art being represented by a prominent member of its own cult. The result as regards the composition of the Committee is stated by the Chairman to have been highly satisfactory, and he suggests the addition to its personnel of a representative of the landscapist's art. The report recently published opens with an expression of the Committee's regret that it found in recent American architecture, particularly in the *ensemble*, so little evidence of the successful collaborative effort of architect, sculptor, and painter that it hesitated to proceed on the

basis that their arts were, in fact, allied in anything but name. They recognise the seriousness of this condition, both in the loss to the arts in question of their rightful share in the architectural work of the country, and of the loss to the country itself of its birthright, a finished architecture. The Committee attribute the trouble to lack of education—that is to say, special education in sympathetic collaboration. At present such education seems confined to individual experiences, and in the work of most architects experiences involving collaboration with sculptor and painter are unfortunately extremely rare. It is not enough that the sculptor, painter, and architect should realise the necessity for unselfish collaboration—they must be taught how it may be had. The Committee feel that in this matter of education lies both the cause and cure of the trouble, and recommend that the attention of the American Institute's Committee on Education be directed especially to this lack of co-operative study. They suggest that the Institute should foster to the utmost the sympathetic co-education of the Allied Arts throughout the country, and that it should take steps to get the Trustees of the Academy at Rome to give special encouragement to such collaborative education in that institution. They further advocate the establishment by the Institute of an annual money prize for the best accomplishment in third-year collaborative work at the Academy in Rome. The report concludes with the hope that opportunity for such collaborative education may be early provided, and that through its agency there may come into American architecture that something which it now lacks and which is only found where sculptor, painter, and architect have learned to merge their several individualities in a common love for a great ideal.

London University: a Proposed University Quarter in Bloomsbury.

The Final Report of the Royal Commission on University Education in London (appointed in May 1910) is now issued as a Blue Book [Cd. 6717]. Briefly, the task set the Commissioners was to examine the existing provision for University education in London in the light of what they thought ought to exist, and to make practical recommendations towards the realisation of the ideal. The Commissioners have come to the conclusion that the organisation of the University is fundamentally defective, and as at present constituted is not calculated to promote the highest interests of University education in London; nor do they think it capable of developing on the present lines into a University such as London ought to have. Much of the defective organisation they attribute to confusion of thought about what is essential and non-essential in University education. Discussing the essentials, the Commissioners urge: First, that students should work in constant association with their fellow-students of their own and other Facul-

ties, and in close contact with their teachers. Secondly, that University work should differ in its nature and aim from that of a secondary school, or a technical or a purely professional school. Thirdly, there should be close association of undergraduate and post-graduate work; a hard and fast line between the two is disadvantageous to the undergraduate and diminishes the number who go on to advanced work. The most distinguished teachers must take their part in undergraduate teaching and their spirit should dominate it all. The main advantage to the student is the personal influence of men of original mind. The main advantage to the teachers is that they select their students for advanced work from a wider range, train them in their own methods, and are stimulated by association with them. Free intercourse with advanced students is inspiring and encouraging to undergraduates.

The Commissioners consider that a condition of satisfactory University work is that the teaching of the University in its several faculties should be concentrated as far as possible in one place. The constituent Colleges and University Departments should be brought together in one part of London, and grouped round the central buildings of the University when they are not actually within its walls. Admitting that London, as a whole, cannot be made a University town like Oxford or Cambridge, where the University dominates the town and may consist of many separate colleges without losing its unity and identity, the Commissioners think it is quite possible to create a University Quarter in London, in which the University life and interests would grow and develop, and students and teachers alike would find themselves in the atmosphere of a great seat of learning. The creation of a University Quarter would lead to economy in administration, to increased co-operation between different departments of study in the interests of new lines of work, and to greater intercourse between students and between teachers.

As to the locality of the proposed University Quarter, the Commissioners are of opinion that the most suitable and convenient site would be found in Bloomsbury. If King's College, the new University Department of Household and Social Science, the Brown Animal Sanatory Institution, and the central University buildings were all moved to the Bloomsbury district, where they would be close to University College, the School of Economics, and the new Constituent College in Arts and Science for evening students, it ought to be possible to create in time a University Quarter which would perhaps do more than anything else to impress the imagination of the great London public and to convince them that the University was a reality.

The Commissioners recommend that the central University buildings, all to be placed in Bloomsbury, should include:—

(a) A great hall for University ceremonies and large educational gatherings.

(b) Accommodation for the Senate, for Committees, for the Principal, and for the headquarters staff.

(c) Accommodation for the meetings of Convocation and for its officers.

(d) A club-house for the Union Societies, headquarters for the Officers' Training Corps, and rooms for professors, graduates, and students.

(e) A central University Library, supplementing the libraries in the Constituent Colleges, University Departments and Schools.

The Commissioners express the view that it would be extravagant to provide Examination Halls for the University in the centre of London where land is expensive. Students in the Constituent Colleges and University Departments would be examined in their own Colleges and Departments. The same practice could be followed in the case of students in Schools of the University; where possible, it is important that students should be examined in familiar surroundings, and by means of apparatus to the use of which they are accustomed. For private students, if room cannot be found for them in the schools and buildings of the University, accommodation should be had by hiring, or by building, suitable halls in some accessible part of London where the price of land is relatively low. The Commissioners see no urgency for the separate provision of scientific laboratories for advanced work in the central University buildings, though they hope that the site would be sufficiently extensive to allow of their erection should they in course of time be proved necessary.

As regards the area of the University, the Commissioners think that the Administrative County is the very largest which would allow of the effective organisation desired. It is thought that the University of Berlin, with nearly 9,000 matriculated students, is already too large, and it is doubtful whether the University of London would ever be able to provide for a much larger number than this an education comparable to that of Berlin. When this point has been reached the need will have arisen for another University, and if the University of London can prepare the way for a new university in the south-east of England by encouraging the development on the right lines of educational institutions beyond its own immediate area, it will have performed a greater service to education and to the State than by attempting a gigantic organisation which would be likely to end in the arid formalism of the Napoleonic Université de France.

It is recommended that the University should encourage the erection of hostels for as many of its students as possible, the hostels to be supported by special funds, and to be under the general supervision of the University. The hostels should mostly be placed in the suburbs, where fresh air

and playing fields are to be had, and they should be so arranged as to attract students and junior teachers from different faculties and from different institutions. Accommodation should be provided in the central University buildings for the Students' Representative Council and other University societies, and headquarters for the Officers' Training Corps.

London Suburbs: New Roads and New Ideals.

A note from the London Society says:—

It must be common knowledge to most that the main roads in and out of London are totally inadequate for present requirements, and will become more and more so as time goes on, but it may not be so generally known that unless something is done, and done at once, the opportunity will have gone for ever. London is being encircled by a series of town-planning schemes, through most of which new roads will have to pass, and if these are once authorised apart from any scheme for main roads, a good road scheme will become practically impossible. A fine scheme for main roads has been drawn up by the Traffic Branch of the Board of Trade, but they have no funds or power to execute it; the Road Board have funds but no power. What is wanted is that power should be vested in some central authority to lay down such a scheme of roads and secure its adoption by all local authorities before it is too late. The Royal Academy, the Royal Institute of British Architects, the Institute of Civil Engineers, the Surveyors' Institution, and the Municipal Engineers have jointly asked to be allowed to represent their views to the Prime Minister; attention has also lately been called to the matter in Parliament by Colonel Yate and by Mr. Joynson Hicks; it is very urgent, but so far nothing has been done. A map is appended, reduced from that published in the annual report of 1912 of the London Traffic Branch of the Board of Trade, which shows clearly how these town-planning schemes will block the way of the necessary new roads unless the lines of the roads are authoritatively laid down at once.

Mr. W. R. Davidge [A.] writing in the current *Garden Cities and Town-Planning Magazine* observes:—

There is room for not one but many Garden Cities, and while they are growing up we must not neglect the mightier cities which, do what we will, seem destined to still further increase. If we cannot at once build cities anew, let us import the Garden City ideal into our existing towns. Let us, if we can, surround them with a belt of agricultural land or open country, and surround each separate suburb too with open spaces for fresh air and recreation. We may not be able in all cases to apply the ideal to the areas already covered by bricks and mortar, but the first essential is a comprehensive plan to ensure that the future suburbs of London—many of them still quite little villages away out in Middlesex, in Surrey, and even further still—some of them already in the grip of one of the many tentacles of the mighty city, shall be saved from the same mistakes. Let us treat the hills and the streams and the open country as a sacred trust to be preserved for the health and well-being of the community, and this cannot be done without a plan of some sort—a comprehensive plan for the future that shall guard not only our cities, but all the country round.

The Henry Jarvis Travelling Studentship.

The third paragraph relating to this Studentship on page 17 of the Prizes and Studentships pamphlet requires amendment by the insertion of the words italicised below, so as to read:—

"The candidate placed highest in the Final Competition will be awarded the Jarvis Studentship, unless *being also qualified for the Scholarship offered by the Royal Commissioners for the Exhibition of 1851* he elects to take the latter Scholarship, in which event the Jarvis Studentship will be awarded to the candidate placed next on the list. The Scholarship and the Studentship will not in any case be awarded to the same candidate."

MINUTES. XII.

At the Twelfth General Meeting (Ordinary) of the Session 1912-13, held Monday, 21st April, 1913, at 8 p.m.—
Present: Mr. Reginald Blomfield, A.R.A., *President*, in the Chair: 22 Fellows (including 10 members of the Council), 30 Associates (including 2 members of the Council), 12 Licentiates, 2 Hon. Associates, and several visitors—the Minutes of the Meeting held 7th April having been already published were taken as read and signed as correct.

Mr. E. Guy Dawber, *Vice-President*, acting for the Hon. Secretary, having announced the decease of William Flockhart, Fellow and Member of Council, reference was made to his services to the Institute, and a tribute of respect paid to his personal qualities and of admiration for his work as an architect, whereupon, on the motion of Mr. Dawber, seconded by Mr. George Hubbard, F.S.A., *Vice-President*, it was

RESOLVED, that the Institute desires to record its deep regret at the death of its esteemed and distinguished Fellow and Member of Council, William Flockhart, and at the loss the Institute and Architecture have sustained thereby, and that a message of condolence be transmitted on behalf of the Institute to his widow and family, sympathising with them in their great bereavement.

The decease was also announced of Francis George Ashwell, *Licentiate*.

The following Licentiates attending for the first time since their election were formally admitted by the President:—Henry George Baker, Henry Charles William Blyth, Alexander Clark Meston, William Herbert Rogers, Granville Edward Stewart Streatfeild, Percy John Waldram.

Papers on MODERN STEEL BUILDING CONSTRUCTION having been read by Mr. FRANK N. JACKSON [Hon.A.] Assoc. M.Inst.C.E., and Mr. Bernard Dicksee [F.], a vote of thanks was passed to them by acclamation, and discussion on the Papers was adjourned till Monday, 28th April, at 8 p.m.

The proceedings then closed, and the Meeting separated at 10 p.m.

Mr. John William Stevens [A.].—It has to be stated that the "J. W. Stevens" whose death was recently announced is not the Associate of the Institute, Mr. John William Stevens, of 21, New Bridge Street, E.C., but an architect of the same name and initials, a member of the York and Yorkshire Society of Architects. Mr. John William Stevens, we are happy to state, is in the best of health, and in the active practice of his profession at the above address.



REPORT OF THE COUNCIL FOR THE OFFICIAL YEAR 1912-1913.

Approved and adopted at the Annual General Meeting, Monday, 5th May 1913.

SINCE the publication of the last Annual Report the Council have held 21 Meetings, of which the Council elected in June last have held 18. The following Boards and Committees appointed by the Council have met and reported from time to time on the matters referred to them: Architectural Education, Annual Dinner, By-Laws Revision, Competitions, Council Procedure, Ecclesiastical Commissioners and Parsonage Houses, Fellowship Drawings, Finance and House, Official Architecture, Professional Questions, Professional Defence, Records, Registration, Royal Gold Medal, Schedule of Charges, Sessional Papers, Town Planning. Particulars of the work of these Boards and Committees are embodied in the Report under various headings.

The losses by death have been as follows:—*Fellows*: John Barlow Badoek, James Oblituary. Thomas Baillie, Jones James Bradshaw, John Thomas Bressey, William Flockhart, George Friend, George Enoch Grayson, Francis Robert Newton Haswell, Peter Lyle Henderson, Edward Blakeway I'Anson, William George Blackmore Lewis, Robert Falconer Macdonald, Francis Edward Masey, Charles Henry Rew, Thomas Robert Richards, Armitage Rigby, Sydney Smirke, Francis James Smith, Sidney Robert James Smith, Sir John Taylor, William Frederick Unsworth, Thomas Henry Watson, Richard Willock; *Retired Fellows*: Lewis Angell, Thomas Arnold, Henry Hall, George Tunstal Redmayne; *Associates*: Edwin Albert Agutter, Edward John Milner Allen, William Allen Coombs, John Henry Eastwood, William Harrison, Archer William Hoskings, John Samuel Paul, William Edwin Salt, William Edmund Wallis, Herbert Winstanley; *Licentiatees*: Francis George Ashwell, Edgar Osborne Banks, Percy Richard Bradford, Ernest Theodore Felgate, Richard Andrew Fuller, Abraham Harrison Goodall, John Joseph Jones, Albert Edward Twells, John Miller Thompson; *Honorary Fellow*: Sir Lawrence Alma-Tadema; *Honorary Associate*: Frederick Thomas Reade; *Honorary Corresponding Member*: Daniel Hudson Burnham. Obituary notices of many of these deceased members have been published in the JOURNAL.

Royal Gold Medal. The Royal Gold Medal was awarded to Mr. Basil Champneys, in recognition of the distinguished merit of his executed work in architecture. The Medal was presented to Mr. Champneys at the meeting on the 24th June 1912.

It has been decided to award the Medal this year to Mr. Reginald T. Blomfield, President of the Royal Institute, for his executed works as an architect and for his contributions to the literature of architecture. His Majesty the King has graciously signified his approval of the award, and the Medal will be presented to Mr. Blomfield at the General Meeting on the 23rd June.

Membership. The following tabular statement shows the present subscribing membership of the Royal Institute compared with corresponding periods of 1910, 1911, and 1912:—

Year	Fellows	Associates	Hon. Associates	Total
1910	874	1,431	48	2,353
1911	862	1,509	55	2,426
1912	859	1,581	56	2,496
1913	847	1,630	54	2,531

During the official year since the last Annual General Meeting 89 Fellows have been elected, 104 Associates, and 1 Honorary Corresponding Member.

Licentiate. The period for the election of Licentiate came to an end on the 24th June 1912, and there are now 2,101 Licentiate on the roll. A number of Licentiate have entered for the special examination qualifying for election to the Fellowship. 21 have passed this examination and 10 have been duly elected to the Fellowship.

New Allied Societies. Since the publication of the last Annual Report the Council have had the pleasure of admitting into alliance with the Royal Institute the following Architectural Societies: New Zealand Institute of Architects, Hampshire and Isle of Wight Association of Architects, South Australian Institute of Architects.

Board of Professional Defence. During the course of the year the Board of Professional Defence have considered applications from several members with regard to cases involving legal considerations, and have given their advice to these members.

Professional Conduct. On the advice of the Professional Questions Committee, the Council have dealt with all complaints as to the professional conduct of members which have been laid before them. Two members who took part in competitions which had been publicly vetoed by the Council have been expelled under By-laws 24 and 25.

The Schedule of Charges. During the past session the Council, assisted by a Sub-Committee, who have been in consultation with the Royal Institute solicitors, have completed the revision of the Schedule of Charges. It is intended to lay the draft before the General Body at an early date.

Henry Jarvis Bequest. An additional sum of money has become available under the terms of the Henry Jarvis Bequest. The Council have obtained the approval of the Trustees to a proposal for the endowment of a Scholarship tenable at the Architectural Association School. Full particulars of this will be published in due course.

The New British School at Rome. During the session the competition for the first Architectural Scholarships at the New British School at Rome has been inaugurated, and the final stage of the competition will take place in September. It will be remembered that in addition to the Scholarship of £200 a year for three years which is offered by the Royal Commissioners of the Exhibition of 1851, the Royal Institute will award a Jarvis Travelling Studentship of £200 a year tenable for two years.

The Examinations. The Progressive Examinations were held in June and November 1912. The Preliminary was held in London, Birmingham, Bristol, Cardiff, Glasgow, Leeds, Liverpool, Manchester, and Newcastle; the Intermediate in London, Cardiff, Bristol, Glasgow, Leeds, Liverpool, Manchester, and Newcastle. The Final and Special Examinations were held in London, and the Special Examination for Colonial candidates in June 1912 in Melbourne, and in November 1912 in Montreal. The Council desire to record their thanks for the valuable services rendered by the Honorary Secretaries and Examination Committees of the various Allied Societies. The results are shown in the following table:—

	Admitted	Exempted	Examined	Passed	Relegated
PRELIMINARY EXAMINATION . . .	310	94	216	142	74
INTERMEDIATE EXAMINATION . . .	225	13	212	114	98
FINAL AND SPECIAL EXAMINATIONS . . .	223	—	223	94	129

The Ashpitel Prize was not awarded this year.

The Statutory Examinations qualifying for candidature as District Surveyor in London, and for Candidature as Building Surveyor under Local Authorities, were held in London in October 1912. There were 7 candidates, of whom 4 passed.

The Council desire to thank the Honorary Examiners for the continuance of their invaluable services.

Prizes and Studentships. The Deed of Award of the various Prizes and Studentships was presented to the Institute at a General Meeting on the 20th January 1913. At the Presentation of Prizes on the 3rd February 1913 an Address to Students was delivered by the President, and a criticism of the work submitted, illustrated by lantern slides, was read by Mr. W. Curtis Green [F.]. An exhibition of the drawings was held from the 21st January to the 3rd February in the Royal Institute Galleries, and was visited by over 1,400 persons. A selection of the Prize Drawings is now being sent the round of the Allied Societies.

Sessional Papers. During the session the following Papers have been read:—
 18th Nov. 1912: "Bath and Wells," by J. L. Ball.
 16th Dec.: "The Walls of Visby, Gotland," by Horace Porter, M.A. Cantab. [A.].
 20th Jan. 1913: "Canadian Architecture," by F. S. Baker [F.] (Toronto).
 17th Feb.: "Modern Hospitals," by A. Saxon Snell [F.] and Wm. Milburn, jun. [A.].
 17th March: "Modern French Architecture," by F. Billerey.
 7th April: "American Museum Buildings," by Cecil Brewer [F.].
 21st April: "Modern Steel Construction," by F. N. Jackson [H.A.] and Bernard Dicksee [F.].

The following Paper remains to be read:—

26th May: "Modern Architecture," by Thomas Hastings (New York).

Registration. The Registration Committee, whose appointment was announced in the last Annual Report, have held regular sittings since that date, and have just presented to the Council an Interim Report on the work which they have done since their appointment. An announcement will probably be made to the General Body before the conclusion of the session.

Finance. The usual Financial Statement appended to this Report indicates the satisfactory state of the finances of the Royal Institute. The Finance and House Committee have given special attention to the subject during the past Session, and have submitted a report to the Council, which will enable them to lay before the General Body before the close of the Session the statement which was mentioned by the President last Session.

Appointments. Since the issue of the last Annual Report the Council have appointed the following gentlemen to serve as the Royal Institute representatives in connection with the various bodies indicated:—

University of London, School of Architecture	{ Mr. Ernest Newton, A.R.A. Mr. John Slater.
International Historical Congress	Mr. Reginald Blomfield, A.R.A.
The Royal Sanitary Institute Congress	Mr. H. D. Searles-Wood.
Town Planning Congress, Ghent.	{ Mr. John Simpson. Mr. Raymond Unwin.
The Board of Architectural Studies, Cambridge University	Professor A. Beresford Pite.

Grants. Since the issue of the last Annual Report the Council have made the following grants:—

Library Fund, £150.	Architects' and Surveyors' Approved Society, £80.
British School of Archæology in Egypt and the Egyptian Research Fund, £5 5s.	Architects' Benevolent Society, £100.
Royal Architectural Museum, £21.	

The following have been the President's appointments to Assessorships during the year commencing 26th April 1912 :—

Competitions.

Balham	Swimming Baths	Mr. H. W. Wills.
Basford, Nottingham	Guardians' Offices, etc.	Mr. F. H. Greenaway.
Beckenham	Central School	Mr. A. W. S. Cross.
Carlisle	Elementary School	Mr. H. C. Charlewood.
Chorley	Council School	Mr. John Brooke.
Devonport	Guildhall and Municipal Offices	Mr. E. Newton, A.R.A.
Dundee	School	Mr. Alex. N. Paterson, A.R.S.A.
Exeter	Hostel	Mr. T. Edwin Cooper.
Hastings	Bandstand	Mr. H. W. Wills.
Newcastle	School	Mr. S. D. Kitson, F.S.A.
Plymouth	Public School	Mr. E. Guy Dawber.
Reading	Secondary Schools	Mr. E. Newton, A.R.A.
Reigate	Laying out of Lodge Estate	Mr. Raymond Unwin.
Stebonheath, Llanelli	School	Mr. G. E. Halliday.
Wombwell	Public Baths	Mr. S. D. Kitson.

Copies of the "Regulations" have been sent to the promoters of numerous competitions throughout the country, and the Competitions Committee have succeeded in obtaining the modification of unsatisfactory conditions in many cases.

A strong Committee, including representatives of the Allied Societies, has been appointed for the purpose of considering the question of official architecture. This Committee is holding regular sittings, and it is hoped that it will be in a position to report at an early date.

The Council has remitted to the Delegates on the Forestry Conference the suggestion that a suitable specification for timber might be drawn up, and after several meetings (one of them in friendly discussion with the Institute of Builders and representatives of the timber trade) the Delegates' views as to the clauses of a specification dealing with timber were submitted for the consideration of the Council. The Council co-opted one of their number as a member of this Sub-Committee, and referred back the draft clauses for further consideration. The matter is still receiving the attention of the Committee.

REPORT OF THE BOARD OF ARCHITECTURAL EDUCATION.

The Board has held seventeen meetings since the issue of the last report.

Mr. Reginald Blomfield, A.R.A., who had acted as Chairman of the Board for several years, resigned the Chairmanship on his election as President, and Mr. Ernest Newton, A.R.A., was elected Chairman.

The Vice-Chairmen of the Board are Mr. Lewis Solomon and Mr. John Slater, the latter having been appointed on the resignation of Sir Aston Webb, and the Hon. Secretary is Mr. W. Curtis Green.

The following Committees of the Board have met and reported from time to time on the matters referred to them :—

Examinations.	Jarvis Travelling Studentship.
Exemptions.	Prizes and Studentships.
Testimonies of Study.	Revision of Syllabus.

The Intermediate Examination.—In response to an application from the University of Cambridge, which has recently formed a Board of Architectural Studies for conducting examinations in Architecture, the Board has recommended the Council to exempt from certain parts of the Intermediate Examination those Students who pass these University Examinations. (For particulars see KALENDAR, p. 415.) The Cambridge Board having requested that the Council should suggest the name of some one who could be co-opted a member, the Council have nominated Professor Beresford Pite.

Problems in Design.—The scheme of problems in design which was instituted to take the place of the old Testimonies of Study of the Final Examination, and came into force in January 1912, is evidently highly appreciated by students. During the past year 228 designs have been received and adjudicated on by the Board; and of these 149 have been approved.

The Board is making inquiries as to the special scientific and engineering courses conducted by the various Architectural and Technical Schools throughout the country.

Examinations.—The Board has conducted the Royal Institute Examinations, and the results as reported to the Council have been published. The Board wishes to place on record its regret at the death of Mr. Edward Pinches, who acted as the professional Examiner for the Preliminary Examination from 1892 until 1911. Mr. James Wilson has been appointed in his place.

Prizes and Studentships.—Committees of the Board, which included several members of the Institute outside the Board, have judged the various Designs and Drawings submitted for the Institute and other Prizes, and have reported thereon to the Council, and the pamphlet of the Prizes and Studentships for 1914 prepared by the Board has been approved by the Council.

REPORT OF THE ART STANDING COMMITTEE.

Four meetings of the Art Standing Committee have been held during the past Session.

Mr. Ernest Newton was elected Chairman, the late Mr. William Flockhart Vice-Chairman, and Mr. E. Guy Dawber was appointed Honorary Secretary.

Of many matters which received the attention of the Committee the following are the most important :—

Having been in communication with Sir Richard Paget and the Society for the Protection of Ancient Buildings with regard to the great architectural interest of the Deanery at Wolverhampton, the Committee have induced the Mayor and Town Council to consider the possibility of including the old Deanery buildings in their scheme for a Technical School, and there is every reason to believe that this is being done.

Much consideration has been given to the treatment of Moody's staircase and its stained glass windows in South Kensington Museum, and the Committee recommended the Council to urge upon the Museum authorities the desirability of replacing the glass.

Attention having been drawn to a report that the fine wooden staircase at Cromwell House, Highgate, was to be removed, the Committee ascertained from the National Trust that, having been in communication with the Great Ormond Street Hospital (the owners of the property), an assurance had been given by them that no steps would be taken as to its disposal without letting the Art Committee know.

The subject of the projected scheme to build shops in Park Lane by the Marble Arch having received the most careful consideration of the Committee, it was fortunately found that no action was necessary as the scheme had been abandoned.

It is a matter of gratification that the Whitgift Hospital at Croydon will not now be interfered with, the question of its partial demolition having again cropped up during the past year. The Art Committee have been most carefully watching the progress of the negotiations, and are pleased to hear that the Local Government Board have finally refused to sanction a scheme which will interfere in any way with the buildings. The thanks of the Committee are due to Mr. C. H. Brodie for the very close interest he has taken in the matter.

Owing to the war between Turkey and the Allies the safety of the churches and other buildings in Adrianople, Salonica, Constantinople, and elsewhere, has engaged the attention of the Committee, and a letter has been written to the Director of the British School at Athens, asking for information as to what is being done to safeguard these valuable buildings, and it is hoped that a satisfactory assurance will be forthcoming.

The subject of the uniform treatment of street name-plates is still receiving attention, and a Committee has been appointed to deal especially with this matter.

The Council having referred but few matters to the Art Committee for consideration during the past year, a notice has been published in the *JOURNAL* stating that it would be of assistance to the members of the Art Standing Committee if architects and others would kindly inform the Hon. Secretary of the Committee whenever any matter likely to require its action came to their knowledge, as it sometimes happened that from want of information early enough to render action effective, the Committee and the Council of the Institute had been compelled to remain passive where timely information might have enabled them to act beneficially.

Suggestions for Sessional Papers have been prepared and submitted to the Council, and it is hoped that these will be read in due course.

REPORT OF THE LITERATURE STANDING COMMITTEE.

Nine meetings of the Committee have been held since the election of the present members.

At the beginning of the Session the following officers were elected: Mr. Edward Warren, F.S.A., Chairman; Mr. R. Phené Spiers, F.S.A., Vice-Chairman; Mr. C. Harrison Townsend and Mr. Theodore Fyfe, Hon. Secretaries.

The Committee, having considered the question of the valuation of the contents of the Library for fire insurance, have adopted certain recommendations which, after the valuation of certain books and drawings has been completed, will be submitted to the Council.

The Council having requested the Committee to consider the matter of the reproduction of the Burlington-Devonshire collection of drawings, the Committee have submitted a scheme to the Council.

A list of sessional papers for the Session 1913-1914 has, at the request of the Council, been drawn up and submitted to them.

The Committee have made arrangements with the American Institute of Archaeology for the exchange of publications. They have further recommended to the Council that the Institute should subscribe to the Byzantine Research Fund, so that the important publications of the Fund should be available for members immediately on publication.

With a view to increasing the general usefulness of the Library and to meet the growing demands which are made upon its resources, more especially in regard to the Loan Collection, the Committee have suggested to the Council the advisability of increasing the annual grant. The recent change in the programme of the Institute Examinations has occasioned inquiries for books which the Library is not at present able to meet.

In view of maintaining the high position which the Institute collection occupies among architectural libraries, and of the expensive character, for the most part, of books on architecture, the Committee have further suggested that members of the Institute might be asked to bear in mind that special donations of books, or contributions for their purchase, would be very helpful in maintaining the standard of the Institute collection, and they regret the lapse of the custom of inviting members, upon election, to contribute to the Library Fund.

The following is the Librarian's Report to the Committee:—

During the twelve months ending the 31st March of the present year 301 volumes and 31 pamphlets have been added to the Library of the Royal Institute, exclusive of periodicals, reports and transactions of Societies, and parts of works issued in serial form.

The number of works presented was 151 volumes and 29 pamphlets.

The number of works purchased comprised 150 volumes, of which 70 were added to the Loan Library.

The attendance of readers in the Reference Library numbered 5,746.

The number of books issued on loan was 3,475.

The number of tickets issued for admission to the Library, other than to members of the Institute or to Students and Probationers, was 60.

The number of books issued through the post was 487.

Mr. Leonard Redmayne has in accordance with the wish of his father, the late Mr. G. T. Redmayne [F.], presented a number of architectural works and journals.

Donations of books, pamphlets or drawings, have also been received from Dr. J. Th. J. Cuypers, Herr Alois Hauszmann, Comte Robert de Lasteyrie, Herr Otto Wagner, Mr. Benjamin Ingelow, Mr. John Bilson, Sir Thomas G. Jackson, Bart., R.A., Monsieur Ernest Hébrard, Mr. Edward Warren, Mr. R. Phené Spiers, Mr. J. Alfred Gotch, Mr. D. H. S. Cranage, Mr. Edward S. Prior, Mr. A. H. Ryan-Tenison, Mr. C. H. Löhr, and Herr Bodo Ebhardt.

Among the books presented or purchased during the year may be mentioned : Hébrard and Teillers, *Spalato : Le Palais de Dioclétien* ; Hauszmann's *A Magyar Királyi József Műgyetem új Épülete* ; Burckhardt's *Der Cicerone* ; Planat and Rumler's *Le Style Louis XIV* ; Martin's *La Renaissance en France* ; Statham's *Short Critical History of Architecture* ; Blomfield's *Architectural Drawing and Draughtsmen* ; Hauszmann's *Le Château royal de la Hongrie* ; Van Millingen's *Byzantine Churches in Constantinople* ; Somers Clarke's *Christian Antiquities in the Nile Valley* ; Martin's *L'Art Roman en Italie* ; Popp's *Die Architektur der Barock- und Rokokozeit in Deutschland und der Schweiz* ; Vallance's *Old Colleges of Oxford* ; Prior and Gardner's *Medieval Figure-Sculpture in England* ; and Crace's *Art of Colour Decoration*.

LIBRARY STATISTICS, 1912-13.

DATE	DAY ATTENDANCES.			EVENING ATTENDANCES.			Books issued on Loan.
	Members.	Non-Members.	Total.	Members.	Non-Members.	Total.	
1912.							
April	158	164	322	74	115	189	316
May	147	195	342	78	125	203	335
June	139	196	335	68	119	187	269
July	172	136	308	60	92	152	271
August	Reference Library closed.			Reference Library closed.			104
September	161	112	273	53	72	125	285
October	169	157	326	111	158	269	353
November	186	200	386	98	138	236	341
December	130	132	262	61	118	179	296
1913.							
January	206	158	364	92	124	216	310
February	151	151	302	88	126	214	303
March	139	189	328	99	129	228	292
TOTAL	1,758	1,790	3,548	882	1,316	2,198	3,475

REPORT OF THE PRACTICE STANDING COMMITTEE.

The Practice Standing Committee beg to submit the following report of their proceedings for the Session 1912-1913 :—

Fourteen meetings have been held since the date of the last report, of which five have been special meetings.

The officers elected at the commencement of the Session were Mr. H. D. Searles-Wood, Chairman ; Mr. William Woodward, Vice-Chairman ; Messrs. Herbert A. Satchell and Matt. Garbutt, Hon. Secretaries. The Committee much regret that illness deprived them of Mr. Satchell's very valuable services for a part of the Session.

The Committee have had under consideration the following matters referred to them by the Council, and the conclusions arrived at have been duly reported :—

I. Revision of Conditions of Contract.—The Sub-Committee dealing with this subject was reappointed, and as a result of their work an interim report has been made, embodying certain recommendations to the Council as to the alteration of Clauses 20 and 21. The remaining conditions are still under consideration.

II. L.C.C. By-laws.—The L.C.C. draft by-laws for the regulation of lamps, signs, or other structures overhanging the public way and not being within the City of London were generally approved by the Committee, who, however, did not consider that these should be made retrospective in operation.

III. Quotation of Prices by Merchants to Architects.—Representatives of the National Light Castings and Builders' Merchants' Joint Committee attended a special meeting of the Committee to discuss the question of the quotation of prime cost prices to the architect and to the builder. The matter is still under consideration.

IV. Plumbers' Dispute: Domestic Supply Services in Hard Metals.—A dispute arose at Dundee as to which trade should fix domestic supply services in hard metals. Correspondence with the Dundee Institute of Architects was referred to the Committee, who considered that the position adopted by the Royal Institute in a similar matter in 1906 should not be departed from, and that the Dundee Institute should accordingly be informed that the Royal Institute is concerned only with the improvement and efficiency of craftsmanship, and does not concern itself with trade questions; it therefore cannot see its way to lay down any rule or to advise its members as to which trade should have the right or preference in the execution of works such as those referred to.

V. Position of Sub-Contractors.—A deputation from the Confederated National Association of Master Plasterers, Plumbers, and Slaters was received by the Committee at a special meeting, when the deputation pointed out the difficulties of sub-contractors, especially those who are not recognised by the main contract, and advocated direct contracts with each trade. The questions raised are still under consideration.

VI. Guide to Professional Practice.—Following upon the papers read last session, under the auspices of the Committee, on "The Newer Responsibilities of Architects," a sub-committee has been appointed to prepare a Report upon the various points raised in those papers with a view to its publication by the Council as a Guide to Professional Practice.

VII. Sessional Papers 1913-14.—The Committee, in compliance with the Council's request, suggested that the Report of the Committee upon the subject referred to in the immediately preceding paragraph might usefully be presented to a General Meeting as one of the Sessional Papers.

Tendering by Architects.—The question of architects tendering for the preparation of designs, &c., of buildings, was brought before the Business General Meeting of the Institute on 2nd December 1912, by Mr. Robert J. Angel [A.] and was referred to the Practice Committee, who appointed a Sub-Committee to consider the matter. The result was embodied in a Report to the Council in which the issue of certain circular letters to all persons who may ask for tenders from architects and to all Members and Licentiates of the Institute was recommended.

Law Cases affecting Architects: Macbeth v. Beardmore.—This was a Scotch case in which the representatives of a deceased Architect were held liable in considerable damages for his alleged dereliction of duty in regard to certain materials employed in a house of which he was the architect. The Committee considered the case of such importance to the Profession generally that they recommended the Council to insert an extended *résumé* of it in the JOURNAL, which was accordingly done (see JOURNAL, 23rd November 1912, pp. 63-64).

Members' Queries, &c.—Some thirty inquiries, bearing upon points of professional practice, building contracts, architects' charges, party wall matters, &c., have been received from

Members and others and dealt with during the Session, but as these matters are of a confidential character it is not possible to give details of them here.

REPORT OF THE SCIENCE STANDING COMMITTEE.

Since the issue of the last report nine meetings have been held. Mr. Alan E. Munby was elected Chairman, Mr. E. W. M. Wonnacott Vice-Chairman, and Messrs. Digby L. Solomon and George Hornblower Hon. Secretaries.

Defective Roofing Tiles.—The Science Committee have been considering the causes of the defects so frequently found in roofing tiles, and appointed a sub-committee to deal with this subject. To this end they have also had the benefit of the advice and experience of Mr. H. Greville Montgomery, the Editor of the *British Clayworker*. In addition, they have received several interesting communications (often accompanied by specimens of tiles) from various practising architects in the country, in response to a notice inserted in the *JOURNAL*. A collection of roofing tiles (both sound and defective) of various makes, with full descriptions of same, has been started, and will be available for the inspection of all interested in the matter, and, it is hoped, will prove of some use to the profession. At the suggestion of Mr. Montgomery, it is proposed to hold an informal meeting of architects and tile manufacturers at this year's Building Trades Exhibition, and to issue a report of the proceedings.

L.C.C. Drainage By-laws.—The Science Committee consider that the time has arrived when it is desirable that some attempt should be made to obtain a revision of the by-laws made under the Metropolis Management Act (1855) and the Public Health Act (London) (1891), and which in some districts of London are under the administration of the borough surveyor or engineer, and in others of the medical officer of health. For this purpose they have appointed a small sub-committee, who have not yet finished their labours, but who have submitted an interim report as follows: "The Sub-Committee have at present held eleven meetings, under the chairmanship of Mr. H. Percy Adams. It having come to the knowledge of this Committee that the L.C.C. have as yet barely made a beginning with their consideration of the matter, it is suggested that the Council of the Institute be asked to approach the L.C.C. with a request that the members of the Committee be accorded an opportunity of meeting the gentlemen charged with the remodelling, with a view to making such observations as seem to them desirable."

Illustrated Technical Dictionaries.—The Munich publishing house of Messrs. Oldenburg are at present engaged in issuing an international series of illustrated technical dictionaries in six languages, dealing with engineering and the science of building construction. At the request of the Editors, the Science Committee have reviewed the work, the review appearing recently in the *Institute JOURNAL*. The Editors have presented a copy of the volume to the Institute.

Research on Materials.—The Committee have been considering for some time the question of endeavouring to promote research on problems concerned with building materials, and negotiations undertaken last year with an institution, which made a most courteous response, having temporarily ceased on a question of available funds, the Council agreed to consider an application to the Treasury for a grant to forward this object.

Private advice led the Committee to recommend approaching the Government under the Development Fund Act, which made it necessary to confine the application to problems concerned with timber. A report was duly prepared, accepted by the Council, and forwarded as a formal application from the Institute to the Treasury, asking that Government funds should be allocated for promoting researches on the causes and prevention of disease and upon the impregnation with preservatives of building timber.

Although no definite outcome of this action can yet be chronicled, that it has aroused sympathetic interest is evident from the fact that two informal interviews have since taken place at the Board of Agriculture (Office of Woods), to which Government Department the matter has been referred by the Treasury, and there seems every reason to hope that the Institute may at least have the privilege of suggesting to some field of expert workers lines of research useful to architects, and of assisting in bringing existing knowledge on this important subject before architects in a condensed and lay form, even should a direct grant not be forthcoming as a result of the application.

Forestry Conference.—A second meeting of the representatives of the Institute with those of the English Forestry Association was held on Thursday, the 11th July 1912, when the consideration of the available supplies of English timber was under review. A report of the first meeting of the joint Conference has already appeared in the JOURNAL (9th November 1912). Further meetings have yet to be held, and it is probable that the final report of the Delegates will not appear for some time. It should, however, be made known to the members of the Institute that there are supplies of home-grown timber available, especially of oak, and information of these could be obtained on inquiry of the Secretaries of the Science Committee or of the Secretary of the English Forestry Association.

Among other matters dealt with during the past Session or still under consideration by the Committee may be mentioned the following:—

Reporting on samples of decayed timber sent from Cetinje, Montenegro.

Solutions and processes employed in the protection and preservation of decayed stonework.

Reporting on various makes of paint used at the Tower Bridge under the supervision of the City Surveyor.

Tests on the weathering properties of several kinds of building stones, the tests being carried out by the Geological Museum authorities at Jermyn Street, under the direction of the Curator.

The compilation of a reference index dealing with all matters relating to the science of building construction.

REPORT OF THE TOWN-PLANNING COMMITTEE.

With a view to bringing to bear upon town-planning schemes all over the country the influence of architects which was provided for in the Town Planning Act, the Committee prepared a series of papers, in one of which was set forth the opportunities afforded by the Act for the Royal Institute of British Architects, the Allied Societies, and other architects, to make suggestions and criticisms in connection with any scheme under preparation. With this paper were published abstracts from the somewhat lengthy procedure regulations, setting out the different stages and the opportunities afforded for architects to inspect the plans, make representations, and attend the public inquiries; particulars of the seven maps which are required to be prepared under a town-planning scheme were also given. A further paper was issued, making definite suggestions as to the action which should be taken at each of the stages, and as to the various points which it would probably be desirable to look out for in the plan and the scheme, and to deal with at the different opportunities.

A letter was sent out to all the Allied Societies, inviting their co-operation, and suggesting lines on which they might work with the Institute to bring their influence to bear, and for those districts not effectually covered by the Allied Societies it was decided to appoint corresponding members to keep the Institute in touch with town-planning development in their respective areas. A number of members have kindly consented to act in certain specified areas.

Within the year two complete town-planning schemes were submitted to the Local Govern-

ment Board for approval—those of the Quinton and Harborne district of Birmingham and of the East Birmingham area. At the invitation of the Local Government Board representatives of the Institute inspected the Quinton and Harborne scheme and made a report upon it, with suggestions, and communications passed between the Committee and the Birmingham Architectural Association, with a view to further action being taken by that Society in other Birmingham schemes under consideration.

One other scheme was examined by the Committee at a stage previous to its submission to the Local Government Board—namely, a very interesting scheme prepared by the Ruislip-Northwood District Council. Upon this some suggestions were made to the Council by the Committee.

Apart from the working of the Town Planning Act, which in the early part of the year occupied the greater part of the time of the Committee, they considered the question of the town planning of Greater London, with special reference to a scheme of main arterial roads and other similar main lines not within the control of the individual town-planning authorities who are preparing schemes under the Act.

The reports on the subject prepared by the Traffic Department of the Board of Trade were considered, and the Committee came to the conclusion that some co-ordinating power or authority beyond what exists would be necessary if the various schemes were to be so planned as to make proper provision for the main highways, open spaces, and railways which may be essential for London as a whole, but which may not necessarily be sufficiently desired by some of the districts through which they might pass to induce them to bear the full cost. A conference was therefore arranged, and representatives of the Royal Academy, the Institute of Civil Engineers, the Surveyors' Institution, and the Institute of Municipal and County Engineers met at 9 Conduit Street to discuss the question of the town planning of Greater London; as a result a joint letter was sent to the Prime Minister, asking him to receive a deputation to give the joint conference an opportunity of putting their views before the Government; it is hoped that an early date may be fixed by the Premier for receiving such a deputation.

Owing to the extent of town-planning activity by the local authorities immediately around London, the Committee have decided to ask the co-operation of architects in each district to act as correspondents for the area of Greater London, on the same lines as the correspondents already appointed in the provinces.

REPORT OF THE RECORDS COMMITTEE.

Four meetings have been held on the following dates, viz.: 13th November 1912, 7th January, 26th February, and 2nd April 1913. At the first meeting Mr. Halsey Ricardo was elected Chairman, in place of Professor Lethaby (resigned), and Mr. Theodore Fyfe was elected Hon. Secretary, in place of Mr. W. Curtis Green (resigned). The Committee considers itself fortunate in securing the co-option of Mr. C. R. Peers, Inspector of Ancient Monuments for H.M. Office of Works.

The Committee has been principally concerned with the preparation, at the request of the London County Council, of a list of London buildings erected prior to 1750 A.D. (or in special circumstances 1800 A.D.) which shall be regarded as Ancient Monuments coming within the province of the Ancient Monuments Protection Act, with a view to their being recommended to the Special Commission. To assist its labours in this direction the Committee has obtained the kind co-operation of the following gentlemen: Mr. Mervyn Macartney, Mr. Walter H. Godfrey, and Mr. A. E. Richardson. Mr. Philip Norman, a member of the Committee, has also kindly consented to assist. A first list of buildings has been forwarded to Sir Laurence Gomme, Clerk of the London County Council.

The Committee has asked the Council to arrange annually for the acquisition of a selection

of the drawings made in the course of travel by prize-winners and submitted for the various studentships of the Institute; former prize-winners also to be asked to present drawings; all such drawings to become the property of the Institute, and be available for reference, but to be available also to the student, on loan, subject to certain conditions. The attention of the Committee has been drawn to the old cottages at Woodlands Farm, Guildford, and after communicating with the Society for the Protection of Ancient Buildings a note was published in the JOURNAL (23rd November 1912), calling the attention of students to these cottages before they were demolished.

Mr. Peers has dealt usefully with a query, raised by Mr. Geo. Hubbard, about the Rollright Stones, Oxfordshire.

Various students have asked the Committee for information about buildings to study, both in this country and abroad, and the Committee has dealt with their inquiries. The attention of members is directed to this matter, and the advisability of referring students who are seeking information to the existence of the Records Committee.

The Committee is grateful to note the practical success of its past recommendation regarding the Essay Prize of the Institute.

The Committee is at present taking steps to acquire records of building words, phrases, and customs which have more or less fallen into disuse, with a view to ascertaining their exact meaning and definition, and their bearing on present-day building craft.

REPORT OF THE HON. AUDITORS FOR 1912.

We have carefully examined and checked the accounts and books with the vouchers for the year 1912, also the certificates and scrip of securities, and find that they agree with the balance sheet prepared by the Accountants.

It is with satisfaction that we refer to the Revenue Account, which shows a surplus of £3,763 3s. 1d., in place of the large deficit of last year.

Upon examination of the accounts it will be seen that this result is to some extent due to a saving in the working expenses, particularly with respect to printing, general meetings, the JOURNAL, KALENDAR, advertisements, and housekeeping; but it must not be overlooked that part of this surplus is due to the receipt of £1,932 6s., the amount returned by the Architectural Union Company, and referred to in the Report of 1911.

There is still a large overdraft from the bank which will now be materially reduced.

As anticipated in the Report for 1911, there has been a greater demand for the use of the galleries, showing an increase of rent of about £260.

There has been additional expenditure in examinations, insurance, salaries, grant to the approved society under National Insurance, interest on overdraft, &c.

The settlement in connection with the winding up of the Architectural Union Company is still being dealt with, and on completion we understand that a proper valuation of the property of the Institute will be made and included in the accounts of the future.

The books of the Institute have been kept in the customary careful manner, and the staff is fully entitled to the best thanks of the members.

JOHN HUDSON [F.].

WILLIAM H. BURT [A.].

FINANCES.

The Accounts of Ordinary and Trust Funds for 1912, prepared by Messrs. Saffery, Sons & Skinner, Chartered Accountants, and audited by Messrs. John Hudson [F.] and William H. Burt [A.], Hon. Auditors, here follow:—

Income and Expenditure Account of Ordinary Funds for the Year ended 31st December 1912.

Dr.		Cr.	
EXPENDITURE.		INCOME.	
To ORDINARY EXPENDITURE—		By ORDINARY INCOME—	
Rent.....	1740 5 0	Subscriptions—	£ s. d. £ s. d.
Gas and Electric Lighting.....	135 1 8	801 Fellows at £4 4s.....	3364 4 0
Fuel.....	44 18 0	Ditto Arrears.....	138 0 0
Salaries.....	1920 4 8	1470 Associates at £2 2s.....	3087 0 0
General Printing, Stationery, Stamps, and Petty Expenses.....	1082 7 4	Ditto Arrears.....	154 9 0
General Meetings and Exhibitions.....	221 2 9	2 Ditto Reinstated.....	14 14 0
Housekeeping.....	282 17 7	47 Hon. Associates at £2 2s.....	98 14 0
Advertisements.....	47 19 9	Ditto Arrears.....	10 10 0
Examination Expenses.....	382 3 4	2054 Licentiates at £1 1s.....	2156 14 0
General Repairs.....	93 7 3	Ditto Arrears.....	35 14 0
Fire Insurance.....	36 17 4		9047 19 0
Medals and other Prizes.....	92 17 6	JOURNAL and KALENDAR—	
Grant to Library.....	150 0 0	Advertisements.....	1000 0 0
Grant to Architects' Benevolent Society.....	100 0 0	Sales of Journal and other Publications.....	744 10 8
Grant to Architectural Association.....	100 0 0		1744 10 8
Grant to Architectural Association Sketch Book.....	25 0 0	Examination Fees—	
Grant to Royal Architectural Museum.....	21 0 0	Statutory.....	27 6 0
Grant to British School at Rome.....	21 0 0	Preliminary.....	577 10 0
Grant to Architects and Surveyors' Approved Society.....	80 0 0	Intermediate.....	941 16 0
Grant to British School of Archaeology, Egypt.....	5 5 0	Special and Final (forfeited).....	442 3 0
	502 5 0	Licentiates.....	189 0 0
The JOURNAL—			1777 15 0
Reporting.....	46 11 0	Use of Rooms—	
Printing and Binding.....	1539 12 6	R.I.B.A. Tenants.....	80 0 0
Illustrations.....	74 17 0	Galleries.....	365 3 2
Addressing, Postage, and Carriage.....	568 0 10		445 3 2
	2018 1 4	Dividend on Architectural Union Co. Shares.....	1922 6 0
The KALENDAR—			
Printing.....	287 7 4		
Postage and Carriage.....	61 11 0		
	348 18 4		
Contributions to Allied Societies.....	495 11 6		
MISCELLANEOUS EXPENSES—			
Legal and Accountants' Charges.....	159 13 8		
Presidents of Allied Societies.....	86 12 1		
President's Portrait Fund.....	81 4 9		
President's Badge.....	10 10 0		
Burlington-Devonshire Drawings.....	47 9 8		
Telephone.....	35 17 4		
Subscription to Comité Permanent.....	18 16 0		
Sundries.....	138 9 7		
	570 12 11		
Interest on Overdraft.....	274 3 10		
Surplus for the year carried to Balance Sheet.....	3763 8 1		
	£14947 13 10		

Examined with the vouchers and found to be correct. 10th April 1913. { JOHN HUDSON [F].
WILLIAM H. BURT [A.] }

Dr.		Cr.	
LIABILITIES.		ASSETS.	
To Sundry Creditors.....		By Investments at cost—	
Bank Overdraft.....	978 8 7	1037 Shares, Architectural Union Co.	15251 1 0
Examination Fees anticipatory of election.....	4391 13 11	New Premises—	
Subscriptions received in advance.....	237 6 0	As per last Balance Sheet.....	19426 6 2
Accumulated Fund—		Debtors, Rent, Advertisements, &c.....	174 3 4
Balance as per last Account.....	£23289 2 2	Subscriptions in Arrear for 1911.....	84 17 0
Add Entrance Fees in 1912—		Ditto.....	483 0 0
Fellows.....	£79 16 0		867 17 0
Associates.....	352 16 0		
	432 12 0		
Arrears for 1912 (as per <i>contra</i>).....	483 0 0		
	24204 14 2		
Less Arrears for 1911, since received or cancelled.....	494 6 0		
Furniture and Fittings bought.....	65 10 3		
	489 16 3		
	£23714 17 11		
Add Surplus of Income and Expenditure Account for 1912.....	3763 8 1		
	£27478 1 0		
	£35419 7 6		

NOTE.—A fine of £7 per annum is payable every 14 years by the Architectural Union Co., Ltd., in respect of the premises held by them under a Lease from the Corporation of the City of London. Notice of renewal must be given at Michaelmas, 1921, and the fine of £98 paid. All the Shares of the Architectural Union Co., Ltd., are held by the R.I.B.A. or its nominees, as shown in the above and Trust Funds Balance Sheet.

SAFFERY, SONS & SKINNER,
Chartered Accountants.

Examined with the vouchers and found to be correct. 10th April 1913. { JOHN HUDSON [F].
WILLIAM H. BURT [A.] }

Revenue Accounts of Trust Funds for the Year ended 31st December 1912.

Dr.			Cr.
ASHPITEL PRIZE FUND:—	£ s. d.		£ s. d.
To Cost of Ashpittel Prize	10 0 0	By Balance from last Account	45 15 13
To Balance carried forward	73 15 10	By Dividend on 20 Shares Architectural Union Co.	38 0 0
	<u>83 15 10</u>		<u>83 15 10</u>
ANDERSON AND WERN FUND:—			
To Amount Paid, Visitor's Travelling Expenses	1 13 10	By Balance from last Account	162 14 7
To Amount Paid, "The Builder"	7 8	By Dividend on 43 Shares Architectural Union Co.	81 14 0
To Balance carried forward	242 7 1		<u>244 8 7</u>
	<u>244 8 7</u>		
ARTHUR GATES LEGACY:—			
To Amount paid Prizeeman, J. H. F. Cowper [A.]	42 0 0	By Balance from last Account	69 17 10
To Balance carried forward	71 11 8	By Dividends on £1100 4 per Cent. N.E. Railway Pref. Stock	43 13 10
	<u>113 11 8</u>		<u>112 11 8</u>
DONALDSON TESTIMONIAL FUND:—			
To Cost of Medal	1 7 6	By Balance from last Account	14 5 3
To Balance carried forward	15 9 2	By Dividends on £72 L. & N.W. Railway 4 per Cent. Consolidated Preference Stock	2 12 0
	<u>16 17 3</u>		<u>16 17 3</u>
GODWIN BURSARY:—			
To Amount paid to Geoffrey Lucas [F.]	20 0 0	By Balance from last Account	67 10 8
To Balance carried forward	76 6 8	By Dividends on £1030 Caledonian Railway 4 per Cent. Stock	38 16 0
	<u>96 6 8</u>		<u>96 6 8</u>
GRISSELL LEGACY:—			
To Amount paid to T. Braddock, Medallist	10 10 0	By Balance from last Account	10 6 0
To Cost of Medal	9 18 0	By Dividends on £20 0s. 8d. "B" Arruhy Great Indian Peninsula Railway	13 10 6
To Balance carried forward	3 8 6		<u>23 16 6</u>
	<u>23 16 6</u>		
LIBRARY FUND:—			
To Purchase of Books, Binding, &c.	174 8 3	By Balance from last Account	24 8 8
To Petty Expenses	4 18 10	By Annual Donation from Mr. Sydney Smirke	3 0 0
To Balance carried forward	1 10 1	By Annual Grant from Ordinary Funds	150 0 0
	<u>180 17 2</u>	By Fines, &c. (Loan Library)	1 9 6
			<u>180 17 2</u>
OWEN JONES STUDENTSHIP:—			
To Amount paid to Noel H. Leaver	100 0 0	By Balance from last Account	136 8 5
To Balance carried forward	165 4 9	By Dividends on £2128 Midland Railway 2½ per Cent. Stock	50 2 0
	<u>265 4 9</u>	By Dividends on £1247 Great Western Railway 5 per Cent. Consolidated Stock	58 14 4
			<u>265 4 9</u>
PEGGS MEMORIAL FUND:—			
To Amounts paid, viz.:		By Balance from last Account	5 17 0
J. H. F. Cowper [A.]	40 0 0	By Dividends on £1070 L. & N.W. Railway 4 per Cent. Consolidated Preference Stock	40 8 2
James Macgregor	20 0 0	By Balance (Deficit) carried forward	15 4 4
To Cost of Medal	1 9 6		<u>61 9 6</u>
	<u>61 9 6</u>		
SAXON SNELL BEQUEST:—			
To Amount paid for Advertisements	9 12 8	By Balance from last Account	140 7 9
To Balance carried forward	153 15 3	By Dividends on £698 4s. New Zealand 2½ per Cent. Stock	23 0 2
	<u>163 7 11</u>		<u>163 7 11</u>
TITE LEGACY FUND:—			
To Amount paid to G. H. Foggett	20 0 0	By Balance from last Account	50 9 9
To Balance carried forward	27 11 5	By Dividends on £1130 2½ per Cent. Consols	37 1 8
	<u>57 11 5</u>		<u>57 11 8</u>
WIMPERIS BEQUEST:—			
To Amount paid to Geoffrey Lucas [F.]	12 10 0	By Balance from last Account	121 4 7
To Balance carried forward	147 13 7	By Dividends on £1024 18s. 8d. Metropolitan Water Board Stock	28 19 0
SAFFERY, SONN & SKINNER, Chartered Accountants.	<u>160 2 7</u>		<u>160 2 7</u>

Examined with the vouchers and found to be correct. 10th April 1913.

{ JOHN HUDSON [F.],
WILLIAM H. BURY [A.].

Dr.		Balance Sheet of Trust Funds, 31st December 1912.		Cr.	
	£ s. d.		£ s. d.		£ s. d.
TO ASHPITEL PRIZE FUND:—					
Capital—20 Shares in the Architectural Union Company, Limited, at £15 per Share	300 0 0	By Government and other Securities, being total value of Trust Funds invested at this date			
Balance at credit of Revenue Account	72 15 10				
TO ANDERSON AND WEBB FUND (Board of Architectural Education):—					
Capital—43 Shares in the Architectural Union Company, Limited, at £15 per Share	645 0 0	By Pugin Memorial Fund—Deficit on Revenue Account			
Balance at credit of Revenue Account	242 7 1				
TO ARTHUR CATES LEGACY FUND:—					
Capital—£1160 N.E. Ry. 4 per Cent. Preference Stock: Value at 31st December 1912	1194 16 0	By Cash at Bank			
Balance at credit of Revenue Account	71 11 8				
TO HERBERT BAKER SCHOLARSHIP:—					
Balance 31st December, 1911	187 10 0				
Less amount paid Mr. Gordon Leith	125 0 0				
	62 10 0				
TO DONALDSON TESTIMONIAL FUND:—					
Capital—£72 L. & N.-W. Railway 4 per Cent. Consolidated Preference Stock: Value at 31st Dec. 1912	74 3 2				
Balance at credit of Revenue Account	13 9 9				
TO GODWIN BURSARY FUND:—					
Capital—£1030 Caledonian Railway 4 per Cent. Debenture Stock: Value at 31st December 1912	1076 7 0				
Balance at credit of Revenue Account	76 6 8				
TO GRISSELL LEGACY FUND:—					
Capital—£2000 Sd. "B" Annuity Great Indian Peninsula Railway: Value at 31st December 1912	413 2 6				
Balance at credit of Revenue Account	3 8 6				
TO LIBRARY FUND:—					
Balance at credit of this Fund	1 10 1				
TO OWEN JONES STUDENTSHIP FUND:—					
Capital—£2128 Midland Railway 2½ per Cent. Debenture Stock: Value at 31st December 1912	1404 9 7				
£1247 Great Western Railway 5 per Cent. Consolidated Guaranteed Stock: Value at 31st December 1912	1806 12 7				
	3211 2 2				
Balance at credit of Revenue Account	165 4 0				
TO PUGIN MEMORIAL FUND:—					
Capital—£1070 L. & N.-W. Railway 4 per Cent. Consolidated Preference Stock: Value at 31st Dec. 1912	1102 3 0				
TO SAXON SNELL BEQUEST:—					
Capital—£698 4s. New Zealand 2½ per Cent. Stock: Value at 31st December 1912	623 7 3				
Balance at credit of Revenue Account	152 15 3				
TO TITE LEGACY FUND:—					
Capital—£1180 2½ per Cent. Consols: Value at 31st December 1912	865 7 6				
Balance at credit of Revenue Account	27 11 6				
TO WIMPERIS BEQUEST:—					
Capital—£1024 18s. Sd. Metropolitan Water Board 3 per Cent. "B" Stock: Value at 31st Dec. 1912	825 1 5				
Balance at credit of Revenue Account	147 13 7				
	£11185 14 7				
SAFFERY, SONS & SKINNER, Chartered Accountants.				£11185 14 7	

Examined with the vouchers and found to be correct. 10th April 1913. { JOHN HUDSON [F].
WILLIAM H. BURT [A].

The Council submit an Estimate of Income and Expenditure of Ordinary Funds for the year ending 31st December 1913, exclusive of Entrance and Final Examination Fees:—

Rough Estimate of Income and Expenditure for Year ending 31st December 1913.

ORDINARY EXPENDITURE		ORDINARY INCOME	
	£ s. d.		£ s. d.
Rates, Taxes, and other expenditure hitherto paid by A.U.O.	800 0 0	Subscriptions and Arrears	9100 0 0
Gas and Electric Lighting	140 0 0	Sale of Publications	750 0 0
Fuel	54 0 0	Advertisements	1000 0 0
Salaries	2100 0 0	Use of Rooms	80 0 0
General Printing, Stationery, Stamps, and Petty Expenses	1200 0 0	Examination Fees	1650 0 0
General Meetings and Exhibitions	300 0 0	Galleries	400 0 0
Housekeeping	60 0 0		
Advertisements	420 0 0		
Examination Expenses	125 0 0		
General Repairs	100 0 0		
Fire Insurance	180 0 0		
Medals and Prizes	150 0 0		
Grant to the Library	100 0 0		
" " Architectural Association	100 0 0		
" " Architects' Benevolent Society	21 0 0		
" " Royal Architectural Museum	25 0 0		
" " A.A. Sketch Book	2150 0 0		
The JOURNAL	250 0 0		
The KALENDAR	500 0 0		
Contributions to Allied Societies	300 0 0		
Legal and Accountants' Charges	100 0 0		
Presidents of Allied Societies	35 0 0		
Telephones, etc.	15 0 0		
Subscription to Comité Permanent	150 0 0		
Sundries	240 0 0		
Interest on Overdraft	200 0 0		
Extraordinary Expenditure (including Annual Dinner)	1695 0 0		
Estimated Balance of Ordinary Income over Ordinary Expenditure	£12980 0 0		
			£12980 0 0
Balance to be employed as follows:—			
Reduction of Overdraft at Bank	750 0 0		
Purchase of Trustee Securities on behalf of Ashpitel and Anderson and Webb Funds	945 0 0		
	£1695 0 0		

Discussion on the Annual Report.

THE CHAIRMAN, in opening the proceedings, expressed his great personal regret that the President was unable to be present that evening, and read the following letter which the President had handed to him and asked him to read to the Meeting: "Would you please be so good as to convey to my colleagues, the members of the R.I.B.A., my regret at not being able to be present at the Annual General Meeting this evening? The reason is that it is the Hundredth Anniversary of the founding of the Royal Academy Club, and all the members are expected to be present. It is thus a very special occasion, otherwise I should most certainly have been present."

The preliminary business disposed of, THE CHAIRMAN formally presented and moved the adoption of the Annual Report, which was seconded by Mr. STANLEY PEACH [F.].

Mr. WM. WOODWARD [F.], rising at the instance of the Chairman, said it had been customary for him for many years past to offer some criticism upon the Annual Report of the Council. But since he had been a member of that body it was obvious that he could not bestow upon the Report so acute a criticism as it had been his habit to do. But in response to the Chairman's very good-natured request, he would offer a few observations from the point of view of a Member of Council. They would bear in mind that practically the whole of the work had been passed in review by the Council of which he was a member, and therefore it was his duty and privilege, as a Member of Council, to say what he had to say at the Council meetings. He thought he should have the whole of the Meeting with him in remarking that during the last ten years the Royal Institute had attained an importance in the public eye which it had not reached prior to that period. He might point to two incidents in support of that statement. The first was that the Government, represented in this case by His Majesty's Office of Works, had appointed their President to be a member of the Committee to advise on the question of the rebuilding of the Regent Street Quadrant. Secondly, it was a matter of satisfaction also that Mr. Reginald Blomfield had been appointed by the Office of Works to form one of a Committee to deal with the pressing question of the Approach to the Mall. Apart from that, there was no doubt of the importance attached in the public mind to the Royal Institute, and he hoped that that feeling would be maintained, and, if possible, strengthened. With regard to their financial position, the Institute had now passed through the responsibility they had incurred in connection with the alterations to their premises. They had practically settled the question of the Architectural Union Company, and he thought that next year, when they had the Report before them, members would find that the Institute had settled down upon a very substantial and dignified basis, representing what was best in the profession of architecture in the country. With regard to the Obituary, they were very sorry to read that they had lost during the year some of their distinguished and loved members. Although they deeply regretted the loss of all of them, he could not help referring particularly to Mr. William Flockhart, Mr. I'Anson, Mr. Sydney Smirke, Mr. Francis James Smith, Mr. Sidney Robert James Smith, Sir John Taylor, Mr. Thomas Henry Watson, and others, and, lastly, he must mention Sir Lawrence Alma-Tadema. The President of the Royal Academy at the dinner of that body last Saturday had devoted a considerable portion of his speech to the works of that great painter. He (Mr. Woodward) had just come back from three or four days' wanderings through the Salons of the various May Exhibitions in Paris, and having viewed the Exhibitions of the "Cubists," the "Post-Impressionists," the "Independentists," the "Humorists," and the other "ists," he had come to the conclusion that the President of the Royal Academy was right when he said that it was impossible for any painter to be successful in his art unless he devoted himself to that deep study of

archæology which was revealed to them in the works of Sir Lawrence Alma-Tadema. Might he also be permitted to say with what satisfaction he regarded Mr. Cope's portrait of the Prince of Wales, which held its own amidst the glorious bits of colour which surrounded it in this year's Paris Salon? On page 42 of the Report they found it recorded that they had 12 Fellows less than last year, 49 Associates more, and 2 Honorary Associates less. Including Licentiates, their roll now numbered 4,632 Members. He thought that a very respectable roll, showing as it did the increasing importance of the Institute; he only hoped that from the class of Licentiates they should find, as they had already found to some extent, the class of Fellowship enhanced. With regard to the Board of Architectural Education, they were evidently doing good work, though the Report did not vouchsafe them too much information. As to the Literature Committee and the Librarian's Report, he should like to remark upon the number of foreign books bought in proportion to the number of English books. Amongst the books purchased there were nine foreign and only six English books. Ought the Literature Committee to sanction an expenditure on foreign books so largely out of proportion to the English? He had no doubt the foreign books were of value, but he thought they might, with advantage to the Institute, spend more money on English books than on foreign books, unless the latter were of some special use and value. The Library statistics were again satisfactory. This year there was a total of day attendances of 3,548, as against 3,594 last year; the evening attendances were 2,198 this year, as against 1,960 last year; and of the books lent there were 3,475, as against 3,786 last year. There was no doubt that their Library was of great value, and they would all agree that every possible assistance was given them by the Librarian; if one wanted a book in connection with any particular subject, Mr. Dircks was always at hand to give them the information they were in need of. With regard to the Practice Standing Committee, he was in a peculiar position. He was a member of that Committee, but he had some little adverse criticism to pass on their procedure. The Practice Committee seemed to be under the impression that they were a sort of secret committee, and that not a word should be uttered of the subjects brought before them. His opinion was that the Practice Committee, like all the other Committees of the Institute, had been constituted for the benefit of the whole body of Members, and the more information they could convey to those among them who were not able to attend their meetings, the better for the whole body who contributed to their financial success. What reason could there be for not setting forth in the Report some of the subjects which had been brought before them? It was of vital interest to Members to know what were the troubles of their professional brethren throughout the country. They wrote and asked the Committee what was the proper procedure and what they should do in certain events, and the Committee gave their considered advice. But in this Report no information could be found on the various questions referred to them. Why should not the Practice Committee give an outline of the cases which had been before them? They must, of course, omit all names, and cases which were *sub judice*, but they could give Members some useful information as to the difficulties which beset the profession, and the pits into which architects might fall if they did not strictly regard the conditions of contract, and so on. He submitted that it was the duty of the Practice Committee to bring before the Annual Meeting an outline of the cases they had had to deal with, omitting names, and that they should in this way give some valuable hints to the younger members of the profession as to the matters they should avoid and the matters to which they should pay particular attention. That was the criticism he had to pass on his own Committee, and he was in a minority of one

when he asked that more information should be given in their Report. Coming to the Science Committee's Report, they would find that reference was very properly made to defective roofing tiles. He thought they were right in taking up that matter, and he suggested they should add defective Fletton bricks, which also required attention as to their use and character. The Science Committee had also stepped in with regard to the L.C.C. drainage by-laws, and were about to perform a very useful work. Under the Public Health Act, if one altered the position of a lavatory, of a water-closet, or a sink, although the same permanent waste was retained, plans, elevations, and particulars had to be furnished. In the Hampstead Borough Council, after having conferred with the twenty-eight Borough Councils in London as to what their procedure was with regard to this section of the Public Health Act, he had succeeded in finding that Hampstead and one other borough—Bermondsey, he believed—were the only two which insisted upon the preparation of plans and particulars when a lavatory, &c., was removed. The Committee, he thought, were taking proper steps in trying to remove those difficulties which stand in the way of architects and others throughout London. He also thought that the Science Committee might have paid a little more attention to the question of dry rot. They referred to the prevention of disease, and the impregnation of preservatives in building timber, but they might have paid more attention to dry rot as affecting the responsibilities of the architect. The importance of this subject had been shown in two or three cases in which he had been concerned recently. The tests of the weathering properties of several kinds of building stones were referred to in the Report, and he thought the Science Committee were doing excellent work in taking up this matter. Coming to the Report of the Honorary Auditors, paragraph 2 stated as follows: "It is with satisfaction that we refer to the Revenue Account, which shows a surplus of £3,763 3s. 1d., in place of the large deficit of last year." That paragraph would be read with intense satisfaction. A little further down there was a paragraph referring to additional expenditure on examinations, insurance, salaries, grant to the approved Society under National Insurance, interest on overdraft, &c. It had been a great pleasure to him, as a member of the Finance Committee, to be one of those who recommended an addition to the salaries of the officers. He said with the greatest possible pleasure that the recommendations they had made for the increases in salaries were unanimous, and the President that afternoon, in Council, took the opportunity of emphasising in very strong terms that one recompense they could make for all the efforts and for all the work of their officers was to increase their salaries. It would be realised that the work of the Institute had considerably increased; and he should be supported by all the members of the Council when he said that every official in the employ of the Royal Institute did his best in furtherance of the interests of the Institute. In making these few remarks he had only cursorily glanced through the Report; he left it to others to pass those criticisms which it had been his delight to pass in the years gone by. But as a member of Council he could now say that the Royal Institute of British Architects was on the road to being a most important body, representative of Architecture in its best sense, and representing it all over the Kingdom. And he would further say that when they had paid off the Architectural Union Company, and when they had cleared off the expense involved in the alterations of their premises, they should be on a perfectly sound basis, with an improved capital, and, he hoped, with a considerable addition of names to the already fine roll of membership of the Royal Institute.

MR. EDWIN T. HALL [F.], in supporting the motion for the adoption of the Report, said that for the first time for many years he had had no hand in its preparation, and

therefore could speak from a detached point of view. He congratulated the Institute very much on the Report. But first he would refer to the obituary, because there were names of many old friends there, and they ought not to pass them over without a little closer reference to them than had already been made. The sad loss of Mr. William Flockhart was a grievous blow to them: a man genial and happy in temperament, an artist to his finger tips, a draughtsman of exceptional merit, and withal a right-down good fellow; he was sure they all regretted intensely that they had lost him. There was another old friend whom they had not seen there lately—viz., George Grayson, of Liverpool, who in his time did yeoman service for and was a very able supporter of the Institute. Their friend, P. Anson, whose father was a Past President and one of his (Mr. Hall's) oldest friends, was one among the deceased. Sir John Taylor, too, a man of most sympathetic and charming character, and always a loyal supporter of the Institute. Then there was Thomas Henry Watson, a Prizeman of the Institute, and a very able man in many ways. Passing from these, he should like to congratulate the Institute on having selected their President for the Royal Gold Medal. Mr. Blomfield, whom he had had the honour of knowing a great many years, was a quite ideal President, a gentleman, a sportsman and a real good fellow, as well as a scholar, a man who took a first in Greats. He was a man of whom they were very proud. They were all delighted that he should be the recipient of the Gold Medal. He should like to congratulate the Institute on the great accession to its numbers. Those who took an active interest in the scheme for bringing under the aegis of the Institute all the practising architects in Great Britain had a great fight in order to get this third class, the Licentiates, created. They hoped that they should get at least a thousand; some of them imagined they might get two thousand, and he was pleased to see that the number was well over two thousand. That meant a great deal to the Institute, because it meant that they had these men in sympathy with the aims of the Institute. They asked the Licentiates to support and uphold the ideals for which the Institute had for so many years been fighting. They were glad to welcome them. They believed they would be loyal Members and that they would be worthily associated with the Institute. Their inclusion in the ranks of the Institute was all for the advancement of the great profession of which they were so proud. Referring to the Board of Professional Defence, there was no set Report from it; but there were a few words which said that they had "considered applications from several Members with regard to cases involving legal considerations, and had given their advice to these Members." He had the honour of being Chairman of that Board of Professional Defence, and he should like to explain to the Members what its business was. It did not mean that they should always fight the battles—that is to say, pay the costs—of architects engaged in litigation. That would be too vast a project; it would mean many thousands a year, and they had no funds for that purpose. But the principle underlying the Board was this: that if there was any great question of principle involved, then the Board of Defence would advise the Council to support that principle. It would be seen that there was a great distinction between that and merely fighting to defend a man who was attacked, or supporting a man when he was attacking. Architects must, of course, take their own responsibility; every person must do that; but the Board tried to give the best advice they could to any architect who came for advice. And in many cases he was glad to say they had prevented litigation, and had shown what they hoped to be the wise course for the architect to adopt in the particular case laid before them. He should like to draw attention to the Henry Jarvis Bequest, because that was a very important matter. The Institute, as they knew, had had a large sum of money left to it, and

a Committee on which he had the honour to serve for a long time considered what was best to do with the money. In the end the new British School at Rome had been supported, and almost started, by the action of the Institute. The Royal Commissioners for the Exhibition of 1881 were giving a Scholarship which would be the blue ribbon of Architectural Scholarships, and the Henry Jarvis Traveling Studentship of £200 a year, tenable for two years, was given by the Institute. This was the nucleus of a great school in Rome which they hoped would redound to the honour and credit of British architecture. With regard to the Examinations he would say little; they were very satisfactory; but there was one thing that he was pleased to see, and that was that the Exhibition of Drawings at the Institute had been visited by no fewer than 1,400 persons. These were not all architects, and it was a good thing to know that the public were taking more interest in these Exhibitions. It would be a great thing when the public had been so educated as to appreciate architecture, because when that took place architecture would go forward with greater strength, as it would have a sympathetic public to deal with. With regard to the Sessional papers, they had had some very interesting papers, amongst them one on Canadian Architecture. It was delightful to them to know that their friends in Canada looked for inspiration to the Old Country, and regarded with sympathy and fraternal affection this great British Institute as the standard up to which they should try and work. He was glad to see that the Institute was extending its grants in research matters, a small grant having been made to the British School of Archaeology in Egypt. With regard to the Board of Architectural Education, he need not tell them that that was a very important Board, which was formed of many distinguished members of the Institute, and it was a great pleasure to see that the attendance on that Board was always large, showing that men were giving their services gratuitously with the object of improving architectural education. The standard of education was rising from year to year; and going through the students' work at their annual exhibition, they were delighted to see that it attained so high a standard. With regard to the Art Committee, everything that that Committee had taken up had been of interest to the profession. Referring to the Practice Committee, whose procedure in one respect Mr. Woodward had criticised, he could understand that there were confidential questions very often submitted to that Committee, and it was rather difficult to give particulars, even though withholding names, without the facts being recognised by both sides—that is, sometimes by the side which was possibly inimical to the practising architect. So there were two sides even to that question. He noticed that the revision of the conditions of contract was to be brought up for consideration. There were many points naturally in those conditions which had to be brought up to date, and they must be amended from time to time as the law advanced and fresh judgments were given. With regard to the position of sub-contractors, the Report states: "A deputation from the Confederated National Association of Master Plasterers, Plumbers and Slaters was received by the Committee at a Special Meeting, when the deputation pointed out the difficulties of sub-contractors, especially those who are not recognised by the main contract, and advocated direct contracts with each trade. The questions raised are still under consideration." He hoped these questions would be taken very carefully into consideration, and that the Committee would not listen to the suggestion that direct contracts should be made with each trade. In the North of England and in Scotland that was very common. But they might take it from him that where it did occur, they practically could never fix the time for the finishing of their contract. Each contractor, if he was distinct, was under an obligation only to his employer, and there was always the danger that if one of them was behind, the other contractors who were retarded by him

would have the opportunity of bringing actions for damages against the client, and they would practically always win. It was only by, as it were, common consent that such contractors did not bring actions, because they were afraid that they might be in the wrong street on the next occasion. He would give an illustration of how it worked. Some years ago he was doing in the North of England a very large job, over £200,000, and he advised the Committee who had charge of the matter to take tenders from one contractor, and not to have the common practice of the district—namely, separate contracts. The Committee, influenced by his advice, unanimously recommended the Corporation to adopt that course. But the local contractors were too strong, and in the Corporation they got an adverse vote, and accordingly orders were given to take tenders from separate trades for each part of the work, contrary to the advice of the Town Clerk and of the Committee. As a last resource, he said: "Will you persuade the Corporation to let us do both, to take the tenders on the lines I have recommended, and take the separate contract tenders too?" The result was that the one contract for the whole was 25 per cent. lower than the sum of the lowest tenders for the separate trades. So that his clients scored, he saved himself and his clients a great deal of trouble, and the result was that they brought out the contract with a saving of £2,000, and completed it to the date of the contract, which they never could have done under the other system. Therefore he hoped that the Practice Committee would give no sort of favourable consideration to the case which had been presented by sub-contractors. Of course it was in the interests of the sub-contractor to have that rôle, but it was not in the interest of the client, and he was certain it was not in the interest of the architect. Turning to the Report of the Science Committee, he noticed that they were taking some action with regard to dry rot. That was of great importance. There had been several actions against architects in connection with dry rot, and in most of those cases the architects had lost the day. He believed it was simply because the Court had not been properly informed, and that it was as reasonable to hold the architect responsible for scarlet fever breaking out in a house as it was to hold him responsible for dry rot breaking out. It was often imported with the timber, and no one should be held responsible for that. But it did make architects take certain precautions, and it might be of interest to them to know that he never used timber in his buildings now unless he had had it previously washed with two coats of corrosive sublimate, which was a germ-killer. He thought that if that were always done they would probably be free of the danger of dry rot. But it must not be done merely superficially; and it must be done before the roofing boards were put on, otherwise where the boards overlapped the rafters there was no impregnation, and consequently no protection. It had recently fallen to his lot to take out the whole of the timber of a large public building which was erected only eight years ago, but which was eaten away with dry rot from end to end. It was not one of his buildings, but he had had to take out the whole of the timber. That would show the grave danger the occurrence of dry rot was to architects, and how important it was that they should be careful about it. With regard to the Town Planning Committee, that Committee was doing very useful work, and work which was being done by several other public bodies in the country. And it wanted very careful handling, because the problem dealt with was very vast. He happened to be a member of the Committee of two other big Town Planning affairs, the National Town Planning Association and the London Society, which were also dealing with the same subject. This main arterial road question was one of the gravest difficulty. There were forty Local Authorities which were related to Greater London, and naturally each one, as the guardians of the rates in each one, wanted to plan their particular districts with the view to the interests of the ratepayers of that

district. But it was of primary importance that the main arterial roads should be laid down, and that all the schemes of these Local Authorities should be co-ordinated to suit those; otherwise it would be found impossible to make great arterial roads from London if each Authority worked on its own. That was a grave problem. He had attended their meetings, and those public bodies were all sympathetic and desirous of doing their best. It was one of the greatest problems which would face any of the central bodies who were dealing with this subject when they had to determine on these arterial roads and get the Local Authorities to work in harmony. Turning to the Report of the Honorary Auditors, it was a great gratification to see that there was a surplus balance of £3,763. It was satisfactory to think that all the big undertakings they had launched a few years ago had been so successful. They had increased their numbers, they had increased their income, they had increased their premises, they had loomed larger in the eye of the public, and it had all resulted in a great financial improvement to the Institute. He hoped the improvement might long continue; he believed it would, with men working together as they did for the good of the profession, although he believed that was not the first consideration, but for the good of architecture and for the greatness of their country. He thought that as long as they did that they would deserve success, and would attain success.

Mr. EDMUND WIMPERIS [F.] said it was a good many years—he was ashamed to say how many—since he attended an Annual Meeting of the Institute. He had come down that evening because there was one matter in the Annual Report to which he did not think they attached sufficient importance. He had the privilege, when an Associate Member of Council, of initiating the Board of Professional Defence. There were only three lines in the Report dealing with the work of this Board for the past year. They had given advice, and their Members might almost say, Thank you for nothing. It seemed to him that at present the Royal Institute of British Architects left something undone which it, or some other body, should do for the profession, and that if it were out of their power to undertake the legal defence of Members as an Institute, the sooner they created some body, either within their borders or just outside their borders, which could take up the cudgels, and say, "Hands off!—if you tackle an individual you tackle the crowd"—the sooner they set about the creation of such a body as that the better. If the Institute was at present impotent in the matter of legal defence, and if their Charter gave them no right as an Institute to take up the cudgels, and if nothing more could be done than for one or two dignified gentlemen to go into the Law Courts and give evidence on behalf of Members, it seemed to him it was high time that some fighting force was created in or outside the Institute to carry matters further. Some body, such as other professions had, should be created, armed with funds, provided possibly gratuitously, or by a levy, so that there should be a guarantee fund of some sort, and then when the Board of Professional Defence had gone through the reports of the case, and reported to the Council that it was a case where professional integrity was guaranteed, funds would be forthcoming to take up the cudgels and enter the lists as a body, and not as an individual.

Mr. H. HARDWICKE LANGSTON said he did not think that they were benefited by the elevation of their friend Mr. Woodward to a seat on the Council. He used to make an excellent speech and attack the Report always from the front. But he seemed to have outgrown his self-imposed honourable task. He hoped the mantle he had cast off would be taken on by one of the younger men, and that they should have some new fire put into the speeches, for it was now strikingly absent from the speeches of their old friend. He wanted to ask the Council a question about a paragraph on page 42, headed Professional Conduct. It said: "Two Members who took part in competitions which had

been publicly vetoed by the Council have been expelled under By-law 25." That should be, "under By-laws 24 and 25." That he thought was a very drastic action to take. It was a very grave matter for a body such as the Royal Institute to expel two Members. For what? Because they took part in a competition which the Council did not approve of. He took exception to the word "veto." The Charter granted no veto to the Council. The By-laws gave no veto whatever. By-law 24 said: "Any Member or Licentiate who may be convicted of felony shall, *ipso facto*, cease to be a Member or Licentiate of the Royal Institute." But if they cast out Members they ought to be able to give some proper explanation for such action. Here were two members of the profession whom they had found good enough to elect as Members, and who had the pluck to say, "In spite of the Council having condemned this competition we shall go in for it." To say that this was a case for expulsion was carrying things too far, and they were acting *ultra vires* in expelling them. Members ought to be told what it was that caused the Council to veto a competition. They were entitled to an explanation, and he hoped that explanation would be forthcoming before the Report was passed. Turning to page 44, in respect to Official Architecture, they did not know yet what Official Architecture was. Did they want a sort of stereotyped front always shown on a building which happened to be for official purposes? Was it a new Order they would create? He hoped the Council would enlighten them on this point. On page 45, in the Report of the Art Standing Committee, was the paragraph: "Attention having been drawn to a report that the fine wooden staircase at Cromwell House, Highgate, was to be removed, the Committee ascertained from the National Trust that having been in communication with the Great Ormond Street Hospital (the owners of the property), an assurance had been given by them that no steps would be taken as to its disposal without letting the Art Committee know." And there it stopped. What were the Art Committee going to do? Were they to hear nothing more about it? Would it be put into an Auctioneer's Sale Catalogue that there was a Cromwellian staircase, a rare specimen, for sale, in parts or in its entirety, and so on? The Art Committee did not tell them whether they were going to preserve it or have it preserved in some place where it could be seen. Then at the bottom of the page the Art Committee stated that "it would be an assistance to them if architects and others would kindly inform the Honorary Secretary of the Committee whenever any matter likely to require its action came to their knowledge." That meant, he supposed, that the Art Committee would take some steps to prevent vandalism—at any rate, he would assume that. But vandalism had been committed in many cases by architects. He was near Bletchley recently looking at an ancient church at Little Horwood which was being restored. It was in the hands of architects, men bearing well-known names in architecture, and in the vicarage garden they were holding a bazaar to raise funds to pay for this church to be "restored" (?) He went into the church to see what was being done under the ægis of the architects. A fifteenth-century window, the external jambs of which were in perfect order and showed no sign of decay except at the edge, was being chopped straight down, and the moulding was being altered from the springing to the cill. He was told that the architects ordered it to be done so. He saw the vicar and told him that the workmen were taking the face off the quoins, and he said he would write to the architects. Another instance. He was having a ramble through Suffolk in 1908, and, getting to Stowmarket, he visited the ancient church, a splendid old building. Walking round to the outside close to the north porch, he found workmen engaged in making deep excavations quite regardless of the bottom of the north aisle and its foundations. In addition, they were digging straight underneath the east

wall of the north porch, and had come through underneath the foundations and up through the floor of the porch with an 18-inch square brick chimney in front of some good openings at the side of the wall, and then straight up through the roof. A skull and bones were lying about as if they were nothing. The men told him they were putting in a heating apparatus. He went to the vicarage, and told the vicar about it and that if he wanted advice he would give it for nothing, but begged him not to destroy the church. The vicar seemed quite unmoved at the destruction that was going on. So he (Mr. Langston) told him that if he had regard for the venerable fabric he ought to get the work done under professional guidance. The vicar simply gave him the cold shoulder, so he left him. Another instance. The church at Althorne, in Essex, was, he found at a visit to that locality in 1880, condemned to total demolition by two architects, one of whom, now deceased, was a President of the Institute. He was permitted, however, after making great efforts, to save that church from destruction; it was restored, and in use as formerly. The profession, as well as the public, ought to have some information as to what they should communicate to the Institute, and through the Institute to the Art Committee, so that steps might be taken. These men in Holy Orders were really the trustees of these ancient buildings, which represented many chapters in the Stone history of the country, and which ought to be preserved. Therefore, it would be a great help if the custodians of these buildings could be told what ought to be done. In the event of anything requiring to be done to these old churches, without seeking to be paid for it, they could offer their advice as to how it should be carried out, and what should be preserved. He noticed that By-law 52, giving the functions of the Standing Committees, did not differentiate between the Practice Committee, the Science Committee, the Art Committee, or anything else; it says: "The functions of the Standing Committees shall be to consider and investigate any subject appertaining to the branches of the profession of architecture with which they are respectively entrusted." How could they expect the public to understand that without definition? He would move that it be considered by the Council that some kind of instruction, or statement of fact, or suggestion, be given in the KALENDAR as to what the respective duties of the Committees were, so that when a knotty question came up one could say which Committee it should go to.

THE CHAIRMAN pointed out that that could not be taken as an amendment to the Report.

MR. LANGSTON said he would submit it as a recommendation. He hoped an answer would be given about the staircase referred to, and about By-laws 24 and 25, and he should like an answer and some elucidation on the point of Professional Conduct, as to why those two Members should have been expelled, and what the point was against them, and what was the objection to the competition.

MR. W. HENRY WHITE [F.] said it would be interesting to know whether Mr. Langston reported those cases to the Art Committee so that they might get into communication with the custodians and prevent the defacement of these ancient buildings. It was only when Members of the Institute brought forward these matters that the various Committees could do any good. The Committee would have been only too pleased to consider the cases Mr. Langston had mentioned. With reference to Mr. Wimperis's speech, he hoped something would be done with regard to the formation of a Professional Defence Fund. It was perfectly obvious that until they got powder and shot they could not effectively do battle with the enemy, and he would suggest that something by way of a levy should be made in order to establish the nucleus of a Professional Defence Fund. It might be possible to make it a condition that no Member should be entitled to benefit from that fund unless he subscribed to it. It would be possible to create a considerable fund by

voluntary subscription on the part of all. Another matter he would draw attention to was the Schedule of Charges. This had been before the Practice Committee, the Council, and Sub-Committees of the Council, and finally a Report had been made, and a draft Schedule presented to Members. The importance of that being got through this Session was very grave. He hoped that when it came before the meeting on the 19th of May that Members would turn up in full force, and that they should be able to carry the Schedule through, particularly for this reason: that the Registration Committee had been working very hard all the Session, and had produced something which he believed would be shortly before them; for if they were to have registration they ought certainly to settle their Schedule of Charges first, and they would be wasting a whole year if they did not get it through this Session. He urged that very strongly upon Members. He thought Mr. Hall had dealt with Mr. Woodward's question as to the Practice Committee, and he was sure the Committee would be willing to give all the information possible which would be of use to Members. But most of the points which cropped up were confidential in nature, and it would be impossible to put it other than in the way that it had been put for the benefit of Members.

MR. K. GAMMELL [A.] said he had stayed for the Meeting that evening primarily because he wanted to support such a suggestion as that put forward by Mr. Wimperis for the establishment of a Professional Defence Fund. He hoped it would be possible, by giving formal notice, for that matter to be dealt with in the form of some resolution at the next Business Meeting. He did not know how it could be put into words which would be practicable, but it had been a matter between Mr. Wimperis and himself as to which of them should bring this matter up. Mr. Wimperis had had it at heart for many years, and he (Mr. Gammell) had felt so deeply about it that he wanted to ventilate the matter. Mr. Wimperis had told him that he wished to raise the matter at the Annual Meeting, and if any formal resolution were proposed it was his (Mr. Gammell's) intention to second it. He saw, however, that it was not possible to do so that evening. But would it not be possible to raise a question of this sort by giving notice to the Members, to see if something could be done to guard them for the future? If so, he would give formal notice that evening, or Mr. Wimperis would give it himself; so that they could go into the matter thoroughly, and have this question on which they felt so deeply opened up.

THE CHAIRMAN: Let me say at once that that notice is quite in order, and I regard the matter as being of such a serious and urgent nature that even if it were not quite in order, I should do my best to bring it into line somehow.

MR. MAURICE B. ADAMS [F.] said he was entirely in accord with everything Mr. Wimperis had said. What had always struck him with regard to questions before the Courts was that while they had men, sometimes leading members of the profession, coming forward to give their services in support of a brother architect in trouble, they would find certain Members perhaps only too ready to give evidence in the contrary direction. Personally he would be the last to wish to preclude such cases from being fully inquired into on their merits, particularly where an architect had been blameworthy, thereby being likely to injure his fellow-craft in the eyes of the public; but in the course of his business he had been into Courts very often, and he had heard evidence given which could only be described as deplorable. He thought architects should hold together, and if they were to get a fund—and he thought they should try to start one—to make it possible to defend a man when he was being attacked unfairly, they should see that such a co-ordinated defence was not checkmated by individuals coming forward and tendering doubtful evidence such as no member of their profession should be prepared to do. With regard to Mr. Woodward's remarks as to the relatively large number

of foreign books compared with English books purchased for the Library, he suggested that that difference arose largely from the fact that English books were presented to the Institute, whereas the foreign books had probably to be purchased. With reference to what Mr. Langston said, was there not a paper already published by the Institute advising people what to do in matters of restoration? But until the Committee was aware of what was going on in any particular instance he did not see how they could act. If Mr. Langston in travelling about came upon anything of that kind, he should put himself into communication with the Archdeacon of that part of the diocese. He would then probably find that he might get some assistance which the vicar, or those who were immediately responsible for objectionable alterations, would not be inclined to give him.

THE CHAIRMAN: There is a Paper published by the Institute called "Hints to Workmen Engaged on Repairs and Restorations of Ancient Buildings." This Paper can be obtained at the Institute at the price of 6d.

MR. LANGSTON: That is the reason it is not obtained, because of its price. You should give it away.

MR. E. GREENOP [F.] said in regard to Mr. Langston's suggestion that the power of expelling a Member who had been guilty of misconduct should not remain in the hands of the Council, that the only alternative would be to have a list of offences made out, upon committal of any of which the Member would, *ipso facto*, cease to be a Member. But that was against the interests of Members, because now the Council had discretionary power given them, so that if a Member made a mistake it could be inquired into and the Member be given another chance if it were found that there were extenuating circumstances. They would lose that if there were a list of offences. With regard to Mr. Woodward, he, too, regretted that he was on the Council, because he missed the genial smile they used to have from Mr. Woodward after having put fifty critical questions on the Report in past years, and getting no answer whatever. He was perfectly satisfied although no answer was given, and nobody was the worse, and everybody seemed more pleased. He felt very strongly about the points raised by Mr. Wimpey. In one of the most flagrant cases they had had, where a firm was attacked, and suffered so much that they went into bankruptcy, one of the members dying in consequence of the worry, he was assured by the surviving partner that they appealed to the Institute to help them, and that the mere expression of opinion by the Institute at a time before the action was brought would have had such a moral effect that the action would not have been proceeded with. If the Institute were to have a fund—he did not care if it was a small one or a large one—the mere knowledge that there was a fund for such a purpose would have such a moral effect that often they would not have to spend any of it, and yet they would attain their end. There was another point: he noticed that in the estimate for the forthcoming year there seemed to be a general method of adding on a considerable percentage to the probable expenditure, he presumed in order to get a larger balance at the end of the year compared with what was put forward as likely. And he noticed that the Examination fees were calculated to come to £1,600, considerably less than this year, and that they were to spend a good deal more in earning them. And again, their fire insurance was to cost double next year compared with this year. He thought that required some explanation. He hoped that instead of having a balance of £1,600 next year, they would get a surplus of something like that of the present year, discounting the large estimates which had been put forward.

MR. ALAN E. MUNBY [F.], Chairman of the Science Standing Committee, said he hoped Mr. Woodward would have criticised their work in a much more formidable way than he had done. The Science Committee in one way

differed from other Committees in that its work could not be effectively carried on without a certain amount of funds. He heard a story of two Members of the Institute who were dining at a restaurant the other day in close proximity to a member of the Science Committee, and one Member was saying to the other what a shame it was that the Science Committee got a great deal of the funds of the Institute, and spent them in a reckless manner, to the detriment of other causes. He did not know any grounds for so extraordinary a statement; the Committee had to go to the Council for every penny they wanted, and very few pennies they got; and he would say, as retiring Chairman of the Science Committee, that if they wanted that Committee to do good work—and there was a tremendous amount of work to be done—a certain sum must be allocated, not necessarily to be spent directly by the Science Committee, but to be under the control, through the proper channels, of that Committee, so that matters connected with materials might be investigated. They had at present before them the question of timber, which he hoped had the sympathetic interest of everybody, because it was very important. They saw by the Report that it had had the sympathetic interest of the Treasury, and of the Office of Woods under the Board of Agriculture. Negotiations were proceeding there, though he did not think it would be proper for him to make a further statement then. But if the Institute could see its way, at a later date perhaps, as their finances improved, to allocate a certain amount of money to specific researches on problems connected with materials which were of importance to architecture, much service would be done and litigation would be often prevented, and probably scientific institutions would be willing to advance funds themselves to help such researches.

MR. W. R. DAVIDGE [A.] said they would all agree with Mr. Munby that the cause of science in connection with architecture wanted supporting, and he was certain that, with the increased financial prosperity of the Institute, funds would not be wanting. He was sure they would not grudge wise and reasonable expenditure for work on the lines advocated by Mr. Munby. He thought the great saving this year was largely due to the Council, which was the body that ordered the expenses, and which Members blamed if they spent too much. The saving was also due to the efficiency of the officers, and the way in which they loyally supported the Council in looking after the general expenditure and improving the income of the Institute. The Institute had saved on their last year's expenditure something like a thousand pounds, which was a marvellous saving when it was considered that the work of the Institute had so greatly increased. And the saving was not limited to one item; it appeared in item after item. There was a saving of £300 on general printing, £100 on general meetings, £60 on housekeeping, £50 on advertisements, £50 on general repairs, £50 on printing and binding, £90 on illustrations, although the character of the JOURNAL had been kept up despite that economy. He was sure they did not want to see the JOURNAL stunted, but they should like to see the expenditure wisely used. While on the subject of the JOURNAL, he might point out, on the other side of the account, that they still got only £1,000 for advertisements. Yet the circulation of the JOURNAL now was more than double what it was. He had no doubt that it would be possible for the officers of the Institute to try and raise the income from that quarter. On printing the Kalendar £110 was saved, and on legal and accountants' charges £220 was saved. And the income had been increased, quite apart from the dividend of the Architectural Union Company, by £1,200. For the ordinary general income that was a very marvellous performance. The Associates' subscriptions had gone up £160, and the Licentiates' subscriptions had increased. The Examination receipts were £320 more, sales of publications had gone up £64, and the hire of the Galleries £260. Coming to the greatest item of all, the Architectural Union Company's shares, he had been search-

ing for information in regard to the Architectural Union Company, Limited, and had asked many Members of the Institute, but until this evening he had no clear notion as to what this mysterious Company was. Some years back they passed resolutions to buy up the shares, and he imagined they had heard the last of paying rent to the Company. Yet year after year they went on paying rent to the Company. It was £1,740 this year, and the same last year, and £1,335 for the year before. Last year the Institute got no dividend. This year it got £1,900. But that did not cover what they had paid to the Company since they took it over, so there was a balance somewhere. It was not shown in the accounts. He did not make any suggestions of inaccuracy of the accounts, but he suggested that the authorities who drew up these accounts should give them some sort of account now that the Institute owned the Company. The accounts and balance-sheet of the Company ought to be part of the Report. If the Company belonged to the Institute, why not wind it up promptly? He did not know who the Directors of the Company were, but there were Directors, and he would ask whether the Directors were paid or unpaid. Had the office of Secretary of the Company been abolished?

THE SECRETARY: It has been abolished. The Company is in liquidation, and the Liquidator is present. The Directors are unpaid.

MR. DAVIDGE: We have paid £1,250 to the Secretary of the Company for loss of his office.

THE SECRETARY: That was done some time ago.

MR. SHEPHERD: I think it was not paid to the Secretary of the Company; it was for other considerations as well. I was informed of that by the Liquidator last year.

MR. DAVIDGE: I am sure we want the facts, and this is the opportunity to get the matter cleared up. I want a direct answer to that, whether the £1,250 has been paid. If that is so, it is sufficient. Are not at least seven subscribing members required for a limited company? Are there other shareholders than the Institute and the two Trust Funds? Further, are there any obstacles now, other than a mortgage of £4,000, to the Company being wound up immediately?

THE CHAIRMAN: I will ask Mr. Max Clarke, the Chairman of the Finance Committee, to reply to these questions.

MR. DAVIDGE: May I also ask the Liquidator to give us presently a rough notion whether the Institute is liable for further amounts other than this £4,000, whether there is a balance likely to come to the Institute, and whether it is possible for these three Directors to vote away this money we have been looking forward to, to some unknown purpose? I see that the Trust Funds have got so many shares, and they have received a dividend of £1 18s. per share. The Institute owns a large number of shares, and the dividend would work out at £1,970 6s., but they have got £1,932 6s., leaving £38 unaccounted for. I ask that the whole of the facts be put clearly before us. Another thing which has been puzzling me for some time is the Jarvis Fund. Mr. Hall mystified me still more by saying that the Jarvis Fund had been left to the Institute. Last year he was told that it was not left to the Institute but to trustees, that it was left for two purposes, either for Travelling Scholarships or for the Institute premises. Now the Institute apparently is going to give or to vote something for a scholarship tenable at a school, presumably it is a Travelling Studentship. If not, will the Chairman of the Institute tell us what it is? There is a little point which wants correcting on page 43, against Finance. "The Finance and House Committee have given special attention to the subject during the past Session, and have submitted a report to the Council which will enable them to lay before the general body before the close of the Session a statement which was mentioned by the President at the last Annual Meeting." That should read "the Business Meeting of the 10th of June 1912." (Vol. xix, p. 574.) What the President did say in so many words was that he

would, before the close of the Session, issue the statement referred to in regard to the question of the representation of the Associates. On the 9th of March 1912, the President said the Council would consider it and report before the end of the Session. No doubt a report would be forthcoming soon, but it ought to have been included in the Annual Report. The Report on the finance, when it comes, should include not only the anomalies of this mysterious Company, but it should also include the possibilities and methods by which these great difficulties of the overdraft, etc., can be avoided in the future. You will pardon me if I am out of order, but it seems to me that the Council rather exceeded their powers in obtaining overdrafts last year for considerably more than was authorised by the general body. And it seems to me that in this Report there should be mentioned the question of By-laws and the interpretation of the Council's powers under them, so as to lay down the matter definitely for the future. Then there is the question of Official Architecture. Mention is made of representatives of the Allied Societies, that representatives have been appointed to consider Official Architecture. Are there official architects on the Committee? [Yes, several.] Are they inviting evidence from official architects as well? [Yes.] And reporting on the whole status of official architecture, architects, and architectural assistants? [Yes.] Thank you, that has done a good deal to clear away several of the points. I hope that when we get the proper valuation of property to which the Auditors refer we shall be able to do away with another anomaly in this balance-sheet—the "accumulated fund," which may or may not represent the market value of this property. But whatever the result is on that point, I am certain the Institute has turned the corner, and I hope its position will improve steadily as the years go by.

MR. WM. WOXNACOTT [A.], Vice-Chairman of the Science Standing Committee, said that by some oversight there was no reference to the Forestry Conference in the Science Committee's Report. The Council had sanctioned a joint conference with the English Forestry Association, and appointed four delegates, and he should not like the general body of Members to think that during the past year nothing had been done. He would, therefore, suggest the addition of a brief paragraph recording that fact. At the foot of the Report should be added a note on the question of the specification for timber. After a meeting with the Institute of Builders and leading representatives of the Timber Trade, the Committee had put forward a suggestion to the Council, in whose hands the matter at present remained.

MR. MUNBY, Chairman of the Science Committee, agreed to the addition suggested. The timber specification was a matter referred to a Sub-Committee of the Council, and the Committee had yet to complete its labours and report. The Committee had held a number of meetings and forwarded a recommendation to the Council, but this had been referred back for emendation. It was now awaiting the Report of the Member who was added to the Committee by the Council. As soon as that was received, they were prepared to hold further conferences.

MR. M. S. BRIGGS [A.], in supporting Mr. Wimperia's remarks, said that it had been remarked that the Institute was not a trade union, but it seemed to be becoming one as fast as it could. They had opened their doors very wide, with the ultimate object of closing them in order to defend themselves as a corporate body bent upon mutual defence. Members were not allowed to go in for certain competitions; surely that was trade unionism; and on the other side of the shield they ought to have the protection of trade unions by some system of mutual defence.

MR. HERBERT SHEPHERD [A.] suggested the insertion of the word "last" in the first line of the Report so as to read: "Since the publication of the last Annual Report."

THE CHAIRMAN assented.

MR. SHEPHERD, continuing, and referring to Mr. Wimperia's remarks, drew the attention of Members to the

report of the case mentioned in the Practice Committee's Report, which, he said, bore out every word that Mr. Wimperis had uttered. He felt sure that every member of the Institute, and everybody connected with the profession, would be only too anxious to support the proposition which Mr. Wimperis had brought forward. Referring to the finances, the speaker said there was one question with regard to the mortgage of £4,000 upon which he should like some enlightenment, because Mr. Stokes told them last time that the whole liability of the Institute remained at £9,000 loan or overdraft. Now they heard of this £4,000 mortgage; and the mortgage was not alluded to in the Report. He had on a previous occasion referred to the way in which the accounts were presented to Members, and he would suggest again to the Council and to the Accountant that the better way to present the accounts would be so that those who run may read—in other words, they should be presented in the form of a profit and loss account. Members would then see at a glance exactly how they stood. On the Assets side in the balance-sheet there was an item "1,037 shares Architectural Union Company, £15,251," and the next item—"New premises—As per last balance-sheet, £19,426," and it was there that the £1,350 they had had to pay in acquiring these shares was included. He maintained that to any business man that would mean cash out of pocket; any one reading it would imagine that that was what the shares cost to buy. In conclusion, the speaker said that he should like as an ordinary Associate Member to thank the President and Council for the services they had rendered during the past Session, and for bringing about this most extraordinary change in the financial position of the Institute. He thought probably that was due in some small measure, though in a very able measure, to his friend Mr. Davidge. The interest Mr. Davidge took in their affairs was the sort of interest they wanted to generate and encourage, especially in the case of so keen, critical and analytical a mind as Mr. Davidge's. It was that spirit which had helped to bring about this gratifying change in their position.

THE CHAIRMAN said they would understand that it would be impossible for him to reply to all the points raised during the discussion. He would only take upon himself to deal with matters arising out of the general report, and would ask Mr. Max Clarke and Mr. Saffery to deal with the financial questions. With regard to the question of sub-contractors raised by Mr. Hall, he would assure the Meeting that the Practice Committee had had this question of sub-contracts under its consideration, and that as a Committee it was opposed to the idea of having sub-contracts. Some most important remarks, not exactly bearing upon the Report, had been made by Mr. Wimperis, and he (the Chairman) thoroughly endorsed those remarks. The Institute ought to fight for the honour of the profession; there was no question about this in his mind. There was this great difficulty—and Mr. Hall had made it perfectly clear—that every man who practised took upon himself certain risks, and the cases which ought to be supported by the Institute were those in which there was a principle at stake. If there were some principle at stake, then personally he should like to see the Institute put on its last shilling in order to fight the thing out to the end. Mr. Langston had made remarks as to the expulsion of two gentlemen who had taken part in a competition which had been barred by the Institute. The loyal Members would understand that injustice would be done if after a competition had been barred, some disloyal Members took part in it. The injustice would be to those who stood loyally by the Institute and refrained from competing. The unfortunate treatment of certain buildings to which Mr. Langston referred happened far too often in this country. What was done was done through ignorance, but he would ask Mr. Needham Wilson to reply for the Art Committee on that

point. The Jarvis Bequest was another point which was called in question, and one speaker had remarked that it did not seem to be in accordance with the terms of the Trust that a scholarship should be offered to the Architectural Association. He must explain that the money for that scholarship was a separate sum which came in afterwards to the Institute, and it was allocated to this purpose with the full consent of the Trustees, who had a discretionary power. He would now ask Mr. Clarke to reply on the questions of finance.

MR. MAX CLARKE [F.], Chairman of the Finance Committee, said that before replying he would like to say that he thought every Member in the room was in sympathy with Mr. Wimperis's remarks. It was only a question of how the money should be raised for forming a Defence Fund. Mr. Wimperis would be in order in moving it at the next business meeting, and having the matter discussed. Personally, he thought that every architect belonging to the Institute should put his hand into his pocket for a certain amount to form a nucleus for such a fund. In their present position it was very difficult for the Finance Committee in the first instance, or for the Council in the second instance, as well as in the final instance, to go into a matter of expenditure the amount of which was practically unknown. They had no money to do it. There was no reason why they should not get the money, and no reason why they should not form a fund for that particular purpose. He thought that that would satisfy Mr. Wimperis, and he saw no reason why it should not be carried out very successfully. With regard to the finances he was in a difficulty. The Liquidator of the Architectural Union Company was present, and he was the right person to ask, because he knew more about the matter than anybody else. So far as some of the items which Mr. Davidge asked about were concerned, he could answer. With regard to Mr. Greenop's remark as to the fire insurance: the fire insurance was last year paid by the Architectural Union Company. This year a new valuation of the premises had been prepared, a valuation of the busts and pictures, and a valuation of the Library. They would now have to take upon themselves the insuring not only of the premises, which previously were insured by the Architectural Union Company, but they proposed to increase the amount of insurance on the Library, and on the building, and on the pictures. That was the reason why £100 was put down for insurance in place of the £50 last year. So far as the advertisements were concerned, unfortunately they had a contract for these, but as soon as that contract expired they expected to increase the amount very largely indeed. It was unfortunate that they had to wait for the contract to run out, but that was the case. With regard to the Jarvis Bequest, his view was that the money was left to the Institute, but there were trustees who had to manage the fund, and nothing could be done by the Institute without the approval of those trustees. After a considerable amount of negotiation, it was decided that the money, or a portion of it, should go to the British School at Rome, and that a small portion of the dividend should be allocated to an Architectural Association studentship. But nothing could be carried out without the approval of the trustees. And as they were rather careful, it was a matter of some difficulty. With regard to the Architectural Union Company, he thought he had better leave the Liquidator to answer the questions that had been raised.

MR. HAROLD E. SAFFERY (of the firm of Messrs. Saffery, Sons, & Skinner, Chartered Accountants): The Architectural Union Company is in liquidation, and I am the liquidator. The directors, the secretary, and the other officers are non-existent except so far as I require them, and I do not pay them. The Architectural Union Company consists of 1,100 shares, and is still alive until I kill it—that is to say, until I hold the final meeting. Of those 1,100 shares, 1,037 are held by the R.I.B.A. in their general fund. The other sixty-three shares are held by the

R.I.B.A. as trust shares. The property of the Architectural Union Company consists of these premises. When certain small legal points have been settled, I will transfer these premises, which now are vested in me, to the R.I.B.A., and then you will hold the lease, which is a perpetual lease from the Corporation, subject to a small fine and a very small ground-rent. There are certain legal formalities to be gone through, and until they are completed the Architectural Union Company is still alive. Therefore the only way it can appear in your balance-sheet is by showing the item it has cost you for those 1,037 shares, which you have paid for out of Ordinary Funds at £15 or thereabouts per share. The other sixty-three are paid for out of the Trust Funds. The only other two matters to be dealt with by me are, first, in regard to the mortgage. That has to be dealt with either by taking over these premises subject to that mortgage, or by finding the money to pay off the mortgage. That is one of the matters which the solicitors are now considering. The Institute will also have to find the money to pay to the Trust Funds the value of the sixty-three shares they hold—not a very large item: sixty-three shares at a fair price would realise, say, £945. So you may have to find the £945 plus the £4,000 for the mortgage; or you may have to find less, if you take the premises subject to the mortgage. I hope that answers the points raised, but the main thing is that the R.I.B.A., or their nominees, have acquired all the shares, and therefore practically the premises belong to them.

Mr. SHEPHERD: Is the Architectural Union Company the mortgagee of these premises?

Mr. SAFFERY: No, there is a mortgagee outside.

Mr. DAVIDGE: As a set-off, we have the assets.

Mr. SAFFERY: No, you cannot incorporate that in the balance-sheet. You are only the possessors of the shares. You have not acquired the premises. The only asset which the Union Company possess are these premises. It is possible that I shall be able to pay a dividend as well as transferring these premises to you, because meantime I am receiving the rent, seeing that the Union Company is still alive, and it is more than likely that I shall pay you back a dividend.

Mr. A. NEEDHAM WILSON [A.] said that Mr. Langston had raised, as he understood, two definite points in his criticism of the work of the Art Committee. One was with respect to the fine wooden staircase at Cromwell House. He could not understand the nature of his complaint, but it seemed to be that the Art Committee had not settled the fate of that staircase before they knew it was going to be disposed of. He would draw his attention to the wording of the Report, "that no steps would be taken as to its disposal without letting the Art Committee know." When the Art Committee knew that the staircase was to be disposed of, they would then take action, and he had no doubt they would be able to take effective action. The Art Committee had sufficient influence, in many cases, to exert considerable moral pressure, if nothing else. In the other three instances Mr. Langston mentioned, it was a great mistake on his part not to have brought them to the notice of the Art Committee, who could not be blamed for inaction. One of the great difficulties the Art Committee had to contend with was that such cases were not brought before them. If they were they could take action, and advise. At present they were at a standstill for lack of business. He would ask members to report cases immediately, either to the Secretary of the Institute or to the Secretary of the Art Committee.

Mr. LANGSTON: There is still my question about the expulsion of Members.

The SECRETARY (answering at the request of the Chairman): There are three passages in the KALENDAR which bear on the subject. On page 470 it is stated in the Regulations for Architectural Competitions, which were adopted by a resolution of the Royal Institute, that "Members of

the Institute and Allied Societies do not compete excepting under conditions based on these Regulations. The conditions of a Competition shall contain the following Regulations as essential." The six essential Regulations are then set out. On page 13 of the KALENDAR, under the heading "Professional Conduct," appears the following Resolution of the Council: "Any Member or Licentiate of the Royal Institute who takes part in any Competition as to which the Council shall have declared by a Resolution published in the JOURNAL of the Royal Institute that Members or Licentiates shall not take part because the conditions are not in accordance with the published Regulations of the Royal Institute for Architectural Competitions, shall be deemed to be guilty of unprofessional conduct." Lastly, there is By-law 24: "Any Member or Licentiate contravening the Declaration A, B, C, or D, as the case may be, signed by him, or conducting himself in a manner which, in the opinion of the Council, is derogatory to his professional character . . . shall be liable to reprimand, suspension, or expulsion in manner hereinafter provided." Those three passages read together give the Council power to expel.

Mr. LANGSTON: But they do not confer the veto, and I still say that the Council cannot expel a man for the reason given.

The CHAIRMAN: I think the Secretary has made the matter quite clear. One or two suggestions have been made for slight verbal amendments in the Report, and I have asked the Secretary, who has made a note of these points, to make the necessary changes.

The Report having been put to the meeting was carried, with one dissentient, and the meeting concluded.

The Sanitary Ten Commandments.

The Bulletin of the Chicago School of Sanitary Instruction reprints the following Ten Commandments of the Housing Committee of the Chicago Woman's Aid Association:—

1. Thou shalt honour thy city and keep its laws.
2. Remember thy cleaning day and keep it wholly.
3. Thou shalt love and cherish thy children and provide for them decent homes and playgrounds.
4. Thou shalt not keep thy windows closed day or night.
5. Thou shalt keep in order thy alley, thy backyard, thy hall and stairway.
6. Thou shalt not kill thy neighbours' bodies with poisonous air, nor their souls with bad companions.
7. Thou shalt not let the wicked fly live.
8. Thou shalt not steal thy children's right to happiness from them.
9. Thou shalt bear witness against thy neighbour's rubbish heap.
10. Thou shalt covet all the air and sunlight thou canst obtain.

On the reverse side of the card is a diagram graphically setting forth these facts:—

Good housing promotes: Health, life, morality, success, ambition.

Bad housing promotes: Failure, stupidity, crime, disease, death.

MODERN STEEL BUILDING CONSTRUCTION.

[JOURNAL, 26th April 1913, pp. 413-39.]

Discussion.

The adjourned discussion on the Papers on "Modern Steel Building Construction" read by Messrs. Frank N. Jackson [*Hon. A.*] and Bernard Dicksee [*F.*] at the Meeting of the 21st April, took place on Monday, 28th April, Mr. GEORGE HUBBARD, F.S.A., *Vice-President*, in the Chair.

Mr. W. G. PERKINS, District Surveyor for Holborn, read the following remarks:—

Mr. Jackson in his Paper has, I think, limited himself too closely to the provisions of the Act of 1909. I should have preferred him to explain to us his own practice in designing this type of building and his method of solving the numerous problems that arise. Take, for instance, the question of wind pressure and the bracing necessary to resist it. Mr. Jackson showed us on the screen one illustration of bracing by putting in horizontals and diagonals. How often, in practice, is it possible to insert such diagonals? How many architects would allow him to do it? You might work them into the sides of a tower, but not into the body of a building, for they would utterly spoil the rooms. For the same reason you cannot employ what is known as "sway bracing." In some cases, "portal bracing" might be used, and with good results and effect, but it is heavy and expensive. This leaves us to use either very deep beams, gusset bracing, or "knee" bracing, the last named being, in spite of some disadvantages, the most frequently employed. I have had this form of bracing used in very large hotels, in the Kodak building, Kingsway, and in additions to the *Pall Mall Gazette* offices. It is true such "knee" braces develop bending moments in the beams and pillars, but such moments can be calculated and provided for. This question of bracing is important, as so many of our large buildings are now erected as a mere shell without cross walls, the rooms being formed afterwards by partitioning off portions of the floors as they are let. Perhaps, however, Mr. Jackson will give us a Paper on the proper design of steel buildings at a later date.

Taking now some of the headings in the Paper, the statement that the District Surveyor has no discretionary powers is nearly, but not quite, true. Paragraph 5 of Section 22 gives him a little latitude as to the fireproofing of pillars and girders, and paragraph 8 permits him to deal with the point raised as to the coupling of twin beams. The intention of the Legislature was in this case not to ensure that the twin beams were stiff enough laterally, but to ensure that, under any conditions of loading, both beams were working together and equally stressed as far as possible. The idea is not a new one and is shown in the handbooks of commercial engineers prior to the passing of the Act. If Mr. Jackson will refer to the Act he will see that it actually uses the words "and intended to act together." In any event, it is good practice.

I would now ask Mr. Jackson why the grillage beams should be designed as pillars, seeing that they are first tied together with bolts and distance pieces and embedded in a mass of solid concrete which would effectually prevent any buckling of the webs. While on the question of grillages the present practice of the County Council is to require the depth of any grillage beam

to be at least one-third of its projection beyond the base of the stanchion or the tier of joists above it. I should like Mr. Jackson's opinion on this.

Now as to painting or cement-washing the steel. It is a mistake to use paint, as it prevents the preservative action of the cement in the fireproofing. The proper treatment is to scale the steel and wash it with very thick cement just prior to casing. If done before erection, the cement wash only dries and gets rubbed off.

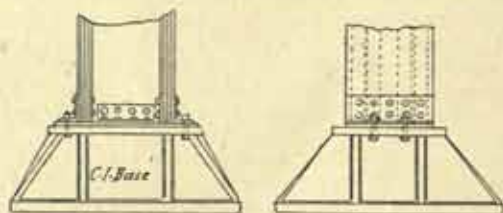
I must now question Mr. Jackson's remarks as to the excessiveness of the floor loads specified in the Act. Apart from the fact that these loads are sure to be exceeded in the erection of the building by the deposit of a parcel of filler joists on the floor beams, and by the storage of cement and bricks on the floors, we have to bear in mind that a change of user may be made without any notice to the authorities, and we must see that the floor will not collapse because the tenant puts something other than his furniture into the rooms. The District Surveyors see many instances of this; architects are seldom called in to advise owners as to what loads they can put upon floors. And we want a little margin to provide against the foolhardy cutting away of beams by gasfitters, hot-water engineers, and similar trades. I have seen chases for pipes 2 inches to 4 inches deep cut in 6-inch reinforced concrete floors, and a bressummer supporting an external wall cut away to accommodate a revolving shutter for $\frac{1}{2}$ of its area!

I endorse Mr. Jackson's remarks as to plate girders, but he might have said something upon the connection of one girder to another. There must be a sufficient number of rivets or bolts in the connection to transmit the end shear of the one beam into the web of the other. In my opinion it is bad to let one bear upon the lower flange of the other, as we often see done, because you induce a local bending moment in the plates and angles. I like the author's method of lapping filler joists. I have seen him do this with excellent result in a very important building in my district.

With regard to stanchions formed by connecting two rolled steel joists by lengths of plate at intervals, I should be glad if Mr. Jackson would tell us what rule he uses for proportioning such plates. So far as I am aware, there is no rational way of doing this. I will not say anything with regard to the permissible stresses in stanchions, as I understand that Mr. Etchells, by whom the tables were prepared, will speak to-night on the subject.

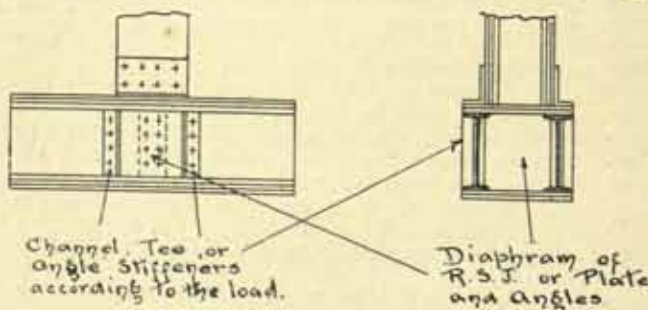
As to rivets, I believe experiments have shown that a rivet sheared on two sections has not twice the resistance of one section, but only $1\frac{1}{2}$ times that resistance. The requirements of the 1909 Act in respect to the number of rivets in gusset plates of pillars are, I think, misunderstood. If you carefully read the Act, it says, "such pillars shall have a base plate riveted thereto with sufficient gusset pieces to distribute properly the load on to the foundations, and the gusset pieces shall have sufficient rivets to transmit the whole of the load on to the base plates." Now, what is the foundation? The term is practically defined for us, for By-law No. 2 made by the London County Council under Section 16 of the Metropolitan Management and Building Acts Amending Act, 1878, enacts that the foundations of every house or building shall be formed of a bed of good concrete. Clause 25 of Section 22 of the 1909 Act refers to the concrete as being the foundation, and Clause 24 again refers to the pressure of the foundation upon the earth. Evidently the foundation

is the concrete. Clearly then, if you cannot comply with Clause 12 (c) of the Act, you must place your pillar upon another structure, a c. I base, or a set of beams termed a grillage, which, by the way, are not provided for in the Act, so that the base of the pillar does not rest upon the foundation. Provided then that the stresses in the grillage beams do not exceed the limits laid down in the Act and that the load upon the concrete under the grillage does not exceed 12 tons per square foot, I see no reason why you should not omit the gusset pieces with all their rivets and design your work as shown on the sketch herewith. Perhaps Mr.



Dicksee will reply on this point. If you simply put your pillar on a stone template, then you must comply with Clause 12 (c) strictly. And just a word as to bolts: always put a tapered washer under the heads next the bevelled flange of a joist in order to ensure a square bearing.

With regard to flues, even if fires are not lighted, they should be provided in bedrooms for the sake of the ventilation they afford. Some by-laws render this compulsory. There is always a difficulty in carrying these flues past the beams in the floors and in the walls. Here is a sketch showing how it has been done in one London hotel.



I am somewhat surprised that the Act of 1909 does not require provision to be made for even heavier loads on roofs than those Mr. Jackson appears to think excessive. At the Coronation of the late King Edward stands were erected in every possible position on the roofs of buildings and crowded with people, and District Surveyors had a very worrying time getting these roofs shored so as to be safe.

Coming to concrete and brickwork, I am entirely with Mr. Jackson. Except in the case of steel frame buildings, I have always taken 15 tons a square foot as the safe load upon blue brickwork in cement, and I have never had a failure. It seems strange that the load upon hard brick in cement mortar, gauged one and four, the bricks square and bonded together, should be limited to 8 tons per square foot, when you may break those same bricks into pieces, mix eight parts of

them with one part of cement, call it concrete, and put 12 tons per square foot upon it. The proportions of the mortar and concrete are those specified in the By-laws.

Mr. HORACE CUBITT [A.] said he was sure they all felt very much indebted to Mr. Jackson and Mr. Dicksee for their able Papers, which must have taken a great deal of time and trouble to prepare. There were a number of speakers present who would doubtless be inclined to discuss the Papers on the same lines as Mr. Perkins; he would, however, adopt a different attitude, not because there was anything in the Papers with which he disagreed, but because the general trend of the Papers seemed against the spirit of the Institute as a body of architects. The Papers were very good and excellent treatises on the subject, but he suggested, with all deference, that they were not complete treatises on the subject of Modern Steel Building Construction. He did not think that the question of construction could properly be divorced from the subject of architecture. To come straight to the point, he had for many years thought that the structural engineer as distinct from the architect should not exist. Mr. Jackson would probably ask, what is to become of them? He suggested that if they gave a little attention to other aspects of architecture than structural engineering—for he considered structural engineering to be a very important branch of architecture—if they were to give attention to the subject of planning, to the subject of architectural design—in the broadest sense of the term, not archaeology—to proportion, balance, etc., he considered that those gentlemen would probably come to a foremost place as architects, and perhaps would give them more real living architecture than they got at present. Perhaps he might be labouring the point, but, to an architect, construction was the basis of architecture, and it seemed to him that no true architecture could be evolved if the man who designed the building did not know what the construction was going to be. Their present system of steel-frame buildings, designed by the architect from every standpoint except construction, and then turned over to the structural engineer to be designed from the structural standpoint, would never lead to real living architecture such as was produced in the great ages of architecture. Mr. Dicksee had dealt with the subject purely on the question of administration, and thus was entitled to disregard architectural requirements; but when dealing with construction one could not legitimately dissociate it from all the various other phases, such as planning, ventilation, lighting, convenience, and the aesthetic aspect. The general argument against the architect being sufficiently competent to design his own construction was that the subject was so difficult that it was impossible for the ordinary architect to master it. He disagreed with that. The subject was difficult, of course, but the architect had lots of difficult things to tackle; he believed that half a dozen years ago some of the District Surveyors were none too well up in this particular subject, but they all administered the Act at the present day, and he took it that if they did not know the subject thoroughly they could not administer the Act. He was afraid his remarks were rather on the same lines, but he suggested that if anyone came there with a Paper entitled "Modern Building Construction," they as an Architectural Society were bound to criticise

it on the total absence of any reference to architecture in it. He would like to refer to the question of the Institute Examinations in regard to this question of steel construction. He had read recent questions set for the Intermediate Examination, and those set for the Final, and it seemed to him that if they were transposed they would be just as appropriate as they were now. The Intermediate, he suggested, should deal with the basis of structural work, and the Final should deal with the more advanced subjects; but they would find that the two Papers of recent years had been very much on the same lines. What an architect wanted to acquire was a very thorough knowledge of the basis of structural mechanics. Once that basis was attained, all the other matters were largely a question of experience, but, if it was not thoroughly attained, then architects would go through their lives without being able to understand how their buildings were constructed. He thought that the paper on structural work in the Intermediate Examination might be modified more on the lines of making it deal rather with broad principles than detailed construction. Then there was the question of education. The education of the architect did not seem to be on the lines of emphasising the principles of this subject. The Institute, of course, was not responsible for education, but it had a big say in the matter, and it could do very much more than it actually did to ram home the necessity of this subject. People would doubtless disagree with him; but, first, he would put this question, "Is construction the basis of architecture?" Secondly, he would ask, "Is steel construction the basis of architecture of steel-frame buildings?" If that is so, then he would ask, "How can architects honestly say construction is the basis of architecture, and then, when it comes to the construction of a certain class of building, turn this construction over to other persons on the plea that it is too difficult for them?"

MR. JOHN TODD, District Surveyor for City of London East, referring to Mr. Dicksee's Paper, pleaded in extenuation of what he was going to say, that he felt that the success of this very admirable Act (for such he considered it) might be, to a considerable extent, imperilled by the preparation and submission of long, complicated, cumbersome, and to a great extent useless calculations, and the dread by architects and engineers of pedantic administration. He did not like these forms; in fact he was strongly opposed to them. Their use involved a vast amount of useless and unproductive labour, and, in his opinion, they were to a great extent unsuitable for the purpose of a District Surveyor. When these forms were used he believed that in every case it would be found that the engineer had first got out his calculations by methods of his own, and had then transformed them so as to fit these forms and give the information required by them, which usually ended by his losing his temper. With regard to their suitability for the purpose of the District Surveyor, when he (the speaker) had a steel frame building scheme before him, the first question that he tried to settle was not whether this stanchion or that girder was in conformity with the Act—that, to his mind, was quite a secondary matter—but whether the engineer or architect in charge of the work was a capable man who was conscientiously striving to produce a design in substantial conformity with the law; and the answer to that primary question profoundly modified his investigations of the designer's calculations. In his

own practice he simply asked for a fair copy of the engineer's own calculations and a set of his blue prints, and he found that, if he were supplied with these, two or three hours in his office with the engineer was all that was necessary to satisfy him on any scheme which was sound in itself and got out by a capable man. He had had only one scheme sent to him on these particular forms. He struggled with it for two evenings and then asked the engineer to come and see him. He pointed out to the engineer that he had written an essay in English and then translated it into German for his (Mr. Todd's) criticism, and that obviously he was not very conversant with German, and he (the speaker) was pretty nearly in the same boat; he therefore asked the engineer to let him have his original calculations so that he could look through them. The engineer was very disgusted, for he said he had made his original calculations at first in the usual way, then two of his best men had employed a fortnight in transforming his calculations so as to suit the forms, and after taking all this trouble he was asked to produce his original calculations. But that, in his experience, was all that was necessary. What he chiefly wanted was a carefully got-out calculation of all the loads throughout the building. He did not know that, in order to satisfy the District Surveyor that the Act was complied with, a lot of elaborate calculations should be got out for rolled steel joists. What he wished to emphasise was that it might well be that this Act, which to his mind was a truly admirable one from an administrator's point of view, might be jeopardised in its acceptance by business men in practice if District Surveyors insisted on too elaborate calculations being got out in a manner which a practical engineer did not adopt naturally. With regard to Mr. Jackson's Paper, he should only like to say one thing, and that was to protest, and to protest strongly, against the assumption, which he personally found too generally made, that to build under the 1909 Act involved a meticulous supervision that would raise endless trouble over trifles that would pass unregarded if the Act of 1894 only were being dealt with. He thought it was fair criticism of this first Paper that it made such an assumption. There was one paragraph which he thought well exemplified this. The author said, speaking of a certain eccentric loading of stanchions, "The case seems particularly hard when, in a sound stiff stanchion section, the stress at the extreme corner of one flange is found to exceed by a minute quantity the stress fixed by the Act, whilst all the rest of the section, probably ninety-nine-hundredths of the whole, is within and mostly far below that stress." He did not suppose there was a single District Surveyor in the whole County of London who would raise an objection in such a case. If he were convinced of one thing, if he were absolutely certain about one fact, it was that the London County Council did not place him (the speaker) in the City of London to play the fool with valuable property. After all, an Act of Parliament was not an end in itself; it was only a means to an end. This particular Act had for its object that the steel frame building should not fall below a certain standard of stability. Let them get back to first principles in this matter. An Act of Parliament, after all, was only part of the law of the land, and as such it had to be administered, and it was intended to be administered with due and proper regard to that legal maxim, *de minimis*. He thought that maxim covered such an instance as he had referred to

from the first Paper, and he should like to protest against the assumption, which was far too generally felt, that this Act of 1909 really placed a great disability upon those who used it. He did not believe it did. He should like to see the general provisions of the Act extended in scope and made to apply to all buildings. His own experience made him feel very strongly that it was not the people who generally used this Act of 1909 who required such very close attention, as compared with those people who would put up thick walls to a building in order to escape from the provisions and supervisions of the 1909 Act; and it was only by architects recognising that they could build under the Act of 1909 without vexatious and harassing supervision that District Surveyors would ever get their assistance and support in getting this method of administration made applicable to the people who really needed it.

Mr. C. STANLEY PEACH [F.] said he thought that Mr. Cubitt touched a very important point when he called their attention to the fact that the title "Modern Steel Building Construction" had not been treated in the architectural manner in which they hoped to see it treated in that room; and he thought it was a little unfortunate that the Papers on such an important modern building material as steel should have been read before the Institute by an engineer and by a District Surveyor and that no architect should have been associated with them. He agreed with Mr. Cubitt that the study of modern materials was one of the most important parts of an architect's work if he was to carry on the traditions of architecture and to continue the evolution which had resulted from architects in the past solving the problems which came before them with such building materials as they found to their hands. That, he thought, was the real modern problem of structure from which architecture must develop. The Paper first of all treated of the sub-sensible forces that were always operating in structure, and that mathematics gave them one of the most perfect and beautiful means for realising the action of sub-sensible forces in structure, and he thought every architect must appreciate that. They would recollect that at the beginning of the Session they had had a Paper from Mr. Ball on "Bath and Wells." If his recollection was correct Mr. Ball recognised that in the Art side of architecture these sub-sensible forces were really the things that mattered, and that it was not the material so much as these hidden forces which governed and controlled design. Mr. Jackson in his Paper showed them the same kind of invisible forces governing the science of architecture. He thought it was interesting to trace this close connection in principle in both the Art and Science of architecture. Coming to Mr. Dicksee's words on administration, he must say that he found great difficulty in agreeing with him. In the first place the use of these forms was a very serious matter from the practice point of view, and he thought that the Institute should have been consulted before the use of these forms was advocated in that room. Mr. Dicksee told them that the forms were got out with the assistance of the Institute. That was not quite correct. From an academical and from a theoretical point of view they were considered by the Science Committee, and as academical and theoretical documents he thought they left very little to be desired; but from the practical point of view there was a great deal to be said against them. It must be remembered that the calculations were really the measurements of sub-

sensible forces. Figures upon paper were not calculations, and unless they appreciated and understood that figures represented actual forces, they were of very little use to them. Now, he asked, did the training of the architect or the District Surveyor really fit him from a practical point of view to understand all that the figures prepared in that elaborate manner really meant? The time, he thought, might come when it would be appreciated, but he did not think it was fully appreciated at the present time; and inasmuch as the forms had a very important bearing on their practice, he thought that before any architect decided to use them the matter should be considered by the Practice Committee, and its full bearing on the policy of the R.I.B.A. be understood and explained to the members of the Institute. The use of those forms would entail a very serious responsibility upon District Surveyors. He did not know whether they realised that, but it was so. For instance, in the forms they were asked to say what the effect of machines in a building would be on the disposition of the load; that meant that every District Surveyor must be an expert mechanical engineer, otherwise he would be entirely in the hands of the expert who submitted calculations. There were many other points that required careful consideration, therefore before they were considered and reported upon by the Institute architects would be wise to use them with extreme caution.

Mr. OSCAR FABER, B.Sc.Lond., Assoc.M.Inst.C.E., Chief Engineer to Messrs. George Trollope & Sons and Colls & Sons, Ltd., said he had recently had the experience of the designing, in conjunction with the respective architects, of three steel frame buildings under the 1909 Act: the Hong Kong and Shanghai Bank in Gracechurch Street [Mr. W. Campbell Jones, F.R.I.B.A., architect], one of the biggest steel frame buildings that had been erected in London under the 1909 Act; the Mercantile Bank of India [Mr. William Wallace, F.R.I.B.A.], and London House [Mr. W. E. Clifton, F.R.I.B.A.]. He would not go into details, because details of an Act of this kind were essentially matters that could only be dealt with by engineers who had specialised in structural engineering. He should like to deal on a very much broader basis with the 1909 Act as an Act.

The 1909 Act allowed, in the case of very high buildings, very much thinner walls than could otherwise be used, and it was a matter of great importance, especially in the more congested portions of the City, where ground rents were very high, that they should be enabled to reduce the thickness of their walls. The thickness of their walls could only be reduced by the use of some type of building such as the steel frame building, which they were only empowered to use at present under the 1909 Act, and therefore it was a matter of national concern that this Act should be a popular Act, and whether it was popular or not amongst architects and engineers depended very largely upon the reception which engineers received from District Surveyors and from the London County Council when they submitted their calculations. In his opinion, the forms advocated by Mr. Dicksee were not the forms which a practical structural engineer used in designing steel work, and he thoroughly agreed with the statements that had been expressed, that if an engineer who had to design a building containing, perhaps, some 1,300 or 1,400 tons of steel, and designed that in the space perhaps of two months, while all

sorts of variations in the shape of the building were being constantly brought before him owing to light and air claims on all sides of the building, it was absolutely impossible for the engineer to fill up the forms and at the same time keep such a grasp on the essential points in his design as would ensure a good structure. The result of insisting on the use of such forms would be that the engineer made the design, and had several assistants to translate his design into figures for submission to the District Surveyor. All his (the speaker's) buildings were in the City of London, and a copy of the calculations, which did not resemble these forms in the least, was submitted to the District Surveyor, and several examples were taken and gone through carefully, and the whole building was considered as a whole on more general and concise lines; and he believed honestly that, unless they were prepared to deal with steel structural buildings on such lines, the Act would be evaded, which would be a national concern, because they would then be using thick walls, and wasting valuable floor space, and also increasing the cost of their buildings. He could assure them also that where the District Surveyor was prepared to administer the Act in a practical manner there was no increased labour whatever entailed on the structural engineer under this Act, and that all the provisions of the Act were merely such as a competent engineer would, for his own sake, and for his own safety, comply with even if the Act did not exist. He mentioned this because it seemed to him so important that the Act should be administered in such a way as to encourage people to work under it. When the Act was evaded and the steel designed in competition, they would find very much higher stresses used, and work done generally in a much more unsafe manner, which was not desirable from any point of view, least of all from the architect's.

He disagreed with the architects who had maintained the view—Mr. Cubitt in particular—that structural engineers as such should cease to exist. Of course, structural engineers were very obliging, and if it were deemed desirable that they should cease to exist, he had no doubt they would immediately do so! But if they did, their work would have to be taken on by someone else, and although he believed there were some architects well versed in the intricacies of the designs of a modern steel frame building, he did not believe, honestly speaking, that the percentage was a very high one. It seemed to him that the proper course, in a modern building, was for architect and consulting engineer to work together, and he was confident that was the only way in which a steel frame building could be successfully designed so as to get the best conditions for the steel work, and also produce the most pleasing structure aesthetically, and the structure best adapted to a particular purpose. The architect had a clear idea of what he wanted, and it was necessary to consult the engineer as to the best way of getting it. When such a consultation had taken place, it was possible for the steel work to be designed in such a way as to combine good engineering design with the necessary subservience to the main features and purposes of the building.

Although he did not want to deal with points of detail, he would just say that the question of wind pressure was dealt with in a most fallacious manner on the sheets suggested by the District Surveyors' Association as being merely added as a super-load to the stanchions. The effect of wind in increasing the load on stanchions was negligible, and the danger which

wind caused to a building was the wracking. On any of the modern buildings in which diagonal braces were impossible, wracking stresses could only be resisted by stiffening of the joints, and only careful designing of the joints enabled the building to stand up against a wind. He did not see any calculation of the bending moments caused by wracking stresses referred to, either in the Act or in these sheets, and he was perfectly confident that it was only by proper analysis of the stresses at the joints that they could tell whether their building was designed to withstand wind or not. To merely add an allowance for wind as a super-load would give an absolutely untrue idea of the safety of the building.

MR. E. FIANDER ETCHells, F.Phys.Soc., A.M.Inst.Mech.E., read the following remarks:

I thank the Council for affording me this opportunity of taking part in the discussion. By frequently pondering on any given subject one can get it into briefer and briefer words, and I would hope and trust that the District Surveyors' Association will keep on pondering about these lists until ultimately they can make them considerably briefer. I can realise that in many cases with regard to the eccentric loading of stanchions there will be dashes and blanks in the tables, and I am speaking sympathetically when I ask you to endeavour to reduce the tables as much as possible.

Section Modulus.—With regard to Section Modulus, I agree with Mr. Dicksee as to the desirability of abolishing the ambiguous use of the term Moment of Resistance, when Section Modulus is intended, but beyond that point some differences arise. Mr. Dicksee states that Section Modulus had to be added to the Concrete Institute list, but a reference to the aforementioned list will show that the term was already provided for. Mr. Dicksee further states that the method adopted is to take the initial letter of the term for its symbol, but I would submit that Z is hardly an initial letter unless one writes phonetically and speaks with a Somerset accent. The Paper also states that the Section Modulus is not a moment; but if it is not strictly a Moment of Resistance, it is still strictly numerically equal to the moment of resistance at unit stress on the extreme fibre. * Moreover a Section Modulus is a moment. It is a moment of an area. In the case of a plate girder the Section Modulus is approximately equal to the area of one flange multiplied by the effective depth of the girder. Speaking quite generally, the modulus of a section is that factor which, being multiplied by the flexural stress, will give the Moment of Resistance to bending. The Paper further states that a moment must comprise both force and leverage. But how about the Moment of Inertia? That is a moment, but it is independent of force. The Moment of Inertia is a second moment of an area, and a Section Modulus is a first moment of an area, but it is not the only first moment. Since B is used for *Bending Moment*, and I for *Inertia Moment*, I would suggest M for the *Modulus of the section*.

Fixity of Pillars.—Mr. Dicksee further states in his Paper, "In making these calculations the pillars should be taken as 'one end fixed and one end hinged.' Only in cases where special means have been adopted to secure fixing may the pillar be taken as with 'both ends fixed.'" Just a word of explanation might be said on that matter, because some captious critics take the elevation of a building, point to the base of the lower story of a stanchion and say, "Is that fixed?" "Yes"; and point to the top and say, "Is that fixed?" "No";

that is hinged." Then they go to the floor immediately above and say, "Is that fixed?" "Yes." Then they turn round and say, "It is both fixed and hinged at the same time"; but the explanation is simple enough: it is simply this, that all engineers are agreed that the strength of a pillar with imperfect fixity closely approximates the strength of a pillar with one end fixed and one end hinged. To say we take one end fixed and one end hinged is merely a saving of words; just as we say the sun sets, whereas we know it is really a point on the earth which sets out of sight of the sun.

Mr. Jackson's Paper.—In the first Paper it is stated that the main provisions of the 1909 Act are in the main excellent and will undoubtedly tend to improve the general standard of steel construction in London, but that there are some clauses for which one cannot quite account. An examination of each of the consecutive drafts of the 1909 Act, together with a close perusal of the volumes of evidence before the Committee of the House of Commons and the House of Lords, will show that some of the clauses criticised in the first Paper were amendments made on the suggestion of the Technical Societies, and other clauses were originally proposed by Technical Societies. These points will be dealt with as they arise. I propose to deal with the points in the order in which they are given in the Paper.

Grillages.—I fully concur in the author's view that the web of the grillage beam under the bases of the stanchion must act as a thin pillar unless special precautions are taken. It is quite clear that the author's references to the grillage are of a general character and do not give an indication of the intricate questions which arise when we come to the actual work of design. Quite a number of diverse conditions may arise. In the case where grillage joists are laid on deep massive concrete blocks which have thoroughly set and hardened and where the joists are long and shallow, the rigidity of the block compared with the greater elasticity of a slender joist would prevent the joist taking up such deflection as would bring the whole of its length into effective use as a cantilever, and the bulk of the load must of necessity be concentrated under the stanchion base. In these cases, calculations which assume that we have an equal upward reaction of the concrete foundation distributed equally over the whole length of the grillage would be inapplicable, and it might be desirable to take into account only such a projection of the cantilever grillage as would lie within a line making an angle of 30 degrees with the horizontal and passing through the extreme edge of the base-plate of the stanchion. In this case the crippling stress of the web of the grillage joist would be the governing factor and the calculations for bending moment would become necessary. In special cases where the bending moment on the grillage joist was calculated it might be desirable to restrict the length of the projecting portion of the cantilever to about three times the depth of the joist, to ensure that there is not any great departure from the assumption that we have the equal upward reaction of the concrete foundation distributed over the whole length of the grillage. In cases where the grillage joists are laid under the stanchion and wedged up so that they have their calculated amount of deflection, and where the concrete is then grouted up to the underside of the joists, our assumptions as to the equal upward reaction of the concrete foundation are more conformable with the actual facts,

and in this case we need not restrict ourselves so closely in the matter of the cantilever length. I gather that this latter is the method adopted by the author, and he is therefore justified in the assumptions which he makes; but a word of caution should be uttered to those who adopt the author's assumption of an equal upward reaction of the concrete, but who might not have the advantage of the author's judgment in deciding whether the assumptions are applicable to the case in hand. I have seen schemes in which the question of stiffness has not even been thought about.

Another word of caution should be mentioned to those who might be inclined to embed the joist too near the bottom of a concrete foundation, as tension cracks may appear in the concrete on the under-side, and we have not had sufficient experience to say without hesitation that there is no danger of the corrosion on a steel joist at the cracks in the course of time. This remark would also apply, and perhaps with greater force, to very shallow slabs of reinforced concrete buried under the ground for an indefinite period of time, where there may be some deflection before they come into play. Foundation blocks and slabs, whether of reinforced concrete or of steel grillages, should be as stiff as possible and offer the maximum resistance to curvature due to deflection. I am inclined to think that plain concrete in foundation work has still some outstanding claims to the attention of those who will build the buildings which will stand the longest.

With regard to the stress coming upon the webs of the joists in grillages, it might be urged that they are laterally stayed by the imbedded concrete; but it is doubtful whether the interior joists of a series of parallel joists are in every case sufficiently packed with concrete to prevent the webs acting as pillars. Where the concrete is solidly packed and where the joists are tied together with bolts and distance pieces the concrete should somewhat stiffen the webs; but to what extent?

Coating of Steelwork.—The question of protection of steelwork is more than a dilemma. It is a trilemma, if one may coin a word. If the steelwork is painted the concrete will not adhere. If cement wash is put on too soon it will dry and flake off and leave flaky layers between the steel and the concrete. If the cement wash is not put on soon the steel will rust in the interval. This last method is perhaps the preferable one, as the mill scale can then be brushed off, and then, of course, cement wash can be applied immediately before the concrete is put round. The modern steels rust more readily than the old wrought iron. While metallurgists are searching for a more rustless steel, some railway engineers have proposed that we should revert to the use of wrought iron.

Load of Floors.—With regard to the load of floors, the author gives the requirement for bedroom floors as being 5 tons per floor, which he divides as being $1\frac{1}{4}$ ton for all furniture and $3\frac{1}{2}$ tons for two people in each room. The Act itself does not specifically mention bedroom floors of domestic buildings. In the matter of floor-loads the Act marks a great advance on previous codes, because as a rule they specify the loads to be allowed in particular buildings irrespective of the use of a particular floor. It was felt that this principle of fixing floor-loads according to the use of the floor should not be carried too far, as it would manifestly be an unnecessary hardship to say that a particular room should only be used as a bedroom, and should not be used for the storage of heavy furniture or for a private dance

or for holding an auction. It was held that floors should be designed for a probable maximum load and not for the probable minimum of one or two persons. Moreover, if a floor were to be designed for a load of 15 lb. per square foot, which corresponds with the weight of 1½ ton for furniture, and the average weight of two people, such a floor would be greatly subject to vibration and would transmit the sounds very readily; and I am confident that the author would not wish to spend his nights in a room with such thin or slight floors above and below him, more particularly if the occupants of the other rooms were numerous and noisy. When, in the future, floors are made sound-proof, and when they are only designed by experts cognisant of the subtle distinction between strength and stiffness, and when persons will never wish to use a floor for anything other than the particular purpose primarily intended, then we may consider what changes might be made in the design of floors. To take a load of five-eighths of a hundredweight (besides all the cogent reasons which might be reduced on the question of stability only) is also a very simple method of ensuring a certain amount of stiffness and freedom from annoyance by persons in other rooms.

The author also points out that a floor of a domestic building might be used with perfect safety for light warehouse purposes. As a matter of fact, floors of domestic buildings are sometimes so used, as when one room is temporarily full of furniture from other rooms. I do not propose to argue from extreme conditions, but, nevertheless, I have known bedroom floors which were used in one case for a workshop, with a heavy iron lathe which shook the floor and the roof above. In another case I have known a bedroom used as a geological museum, and in another case a man had made a collection of stone statues: his room was so crowded that the floors had to be shored up. I do not suggest for a second that this represents the normal uses of rooms; but it is our duty as engineers and architects not to depart too widely from traditional strengths, until people generally are accustomed to lighter methods of construction, and until they are properly cautioned not to lean against the walls nor to store too much furniture on the floors. Perhaps the author may not be aware of the origin of that particular item. I have defended it because I have thought it quite reasonable. Now let me tell its origin. It was the formal recommendation by the R.I.B.A. after consultation with three of their Committees, and it was sent to the County Council as being desirable for the load on domestic buildings, and I quite agree with the Royal Institute.

There are also some other points I wish to deal with if I may. The author has stated that there is an enormous difference between the ordinary competitive commercial provision for floor-loads and what is now required under the 1909 Act. I will tell you architects what some of the "hard pressed" steel contractors may be tempted to do under the stress of competition. You ask them: "Is the stress less than 7½ tons?" They answer, "Yes." Then you ask them, "Will the floor carry 1½ cwt. to the square foot?" And they say, "Yes"; but if you ask them whether the floor would carry 1½ cwt. when the stress is 7½ tons, it is quite possible they would be eloquently silent.

The author has stated that in one case which came under his notice stresses of 16, 22, and 24 tons per square inch were found, taking the loads given by the designer of 1½ cwt. per square foot inclusive of the dead

weight; these drawings were accompanied by a letter, stating that the stresses on the steelwork did not exceed 7½ tons per square inch, the limit now prescribed. Is not this the strongest proof that some rule properly administered is essential in dealing with modern complex forms of construction? And, since the author states that the previous provision was 1½ cwt. per square foot, I think there is no harm, no danger, no detriment or disadvantage in the legislation requiring the load which is in accordance with the traditions of architecture, and with the load which the speaker says is so general for floors of office construction.

With regard to the working stress of 8 tons, I would point out there that the endeavour was to obtain a stress which should be a quarter of the mean ultimate resistance of the standard mild steel, and the various Institutes agreed with the load of 7½ tons, and the Council merely enacted what was suggested should be enacted, and besides which, seven of the leading steel-makers' lists, which were considered along with a mass of other data, recommended that a stress of 7½ tons per square inch should be adopted, so that I think there was a fair amount of evidence that 7½ tons was the usual practice. Critics might say, "Yes, the steel-makers say they work to 7½ tons in the catalogues, but do they?" But now, quite apart from that, since we have the recommendations of Technical Societies, I think 7½ tons was a justifiable stress at the time. Since that date the Engineering Standards Committee have raised the quality of steel by one ton, and that, of course, would have a slight influence in raising the permissible mean stress, but the eighth of a ton increase on the mean ultimate stress is not worth troubling about.

Thickness of Webs.—With regard to web stresses on beams, the author says the web of a beam is to be stiffened where the depth of the beam exceeds sixty times the thickness of the web plate. Few engineers would desire to exceed that limit. I wish that speaker had given evidence on behalf of the Act, because originally it stated the web thickness should be at least 1/16th of the depth of the beam, and some said this was too unutterably stringent, and in deference to those views the Council conceded the point up to the present limit.

Twin Girders.—The author goes on to speak of twin girders, and he says the provision in the Act seems a little strange. Well, perhaps it does seem a little strange, because the original intention has been obscured; and might I point out that quite a number of the clauses he considered are amendments made by the opposition? The original draft in this particular case required that twin girders, which may have heavy loads trimmed in on one side, should have rigid connections which would tend to equalise the load.

Might I show you the metamorphosis of a clause? The intention may be gathered from the following preliminary note: "Where two or more joists are arranged alongside one another and are intended to act together in supporting a wall or any other load, they should be effectively tied together, preferably by means of cast-iron separators (which fit accurately between the flanges) and bolts passing through joists and separators." It was thought that only in this way could it be assured that each girder would take its full and fair share of the load, and that the two joists would act practically as one. An early draft states, "Wherever two or more joists are arranged alongside one another and are intended to act together in support-

ing a wall or any other load, they shall be fixed together by means of *cast-iron* separators and bolts or by riveted plates or any other equally efficient manner which may be approved by the District Surveyor." There, there is an endeavour to open up the clause. The next change leads to the introduction of the possibility of using gas barrels and bolts, suggested by the opposition as being quite permissible, so that we get the final draft—the word "*cast*" is omitted you notice—"Wherever two or more girders are arranged alongside and closely adjacent to one another and are intended to act together, they shall be fixed together by means of *iron* separators and bolts or by riveted plates or in any other equally efficient manner approved by the District Surveyor."

Loads on pillars.—Now with regard to the eccentric loads on the stanchions. The author states that the pillar formula vary within certain limits, and those laid down under the 1909 Act for stanchions fixed at one end are about a fair average, taking into account the conditions obtaining in the construction of steel buildings.

Now, then, while these limits were proposed by the County Council, they were also proposed quite independently by the Institution of Civil Engineers, and it is remarkable, I think, that two sets of persons acting quite independently should give the same loads, decimal by decimal, seeing the very great chances there were for divergence. The author states further, "The limits fixed for stanchions with both ends free are in my opinion altogether too low, as there are no absolutely free ends in building work." Then I would say that if there are absolutely no free ends in building work, then the lowness of the figures will not matter very much.

The author also in dealing with eccentric loads says: "The case seems particularly hard when in a sound stiff stanchion section, loaded as sketch, the stress at the extreme corner of one flange is found to exceed by a minute quantity the stress fixed by the Act." Well, I will say the hardship, if any, is not likely to be very great, and it could easily be obviated in the design stage. Moreover, I would also point out that the argument for average stress is not necessarily a very strong one because in the case of a beam loaded practically to breaking point the average stress is always zero.

Rivets.—The author in speaking of rivets and shearing area says, "An arbitrary limit has been imposed under the Act, fixing the shear on the rivet in these conditions to one and three-quarter times the same rivet in single shear. One cannot see the reason for this." I will tell him the reason: It was imposed by the opposition.

Stresses on Rafters.—With regard to roof trusses, the author states that they are usually loaded at the intersections of the braces only, but sometimes the load is distributed along the whole length of the rafter back, which then has to carry as a girder between the braces, being assisted partly by its continuity over those points and partly by the fact that the compressive stress in the back is applied at the gauge line of the bar, which is considerably below the neutral axis of the section as a rule." I take it the author in these cases would limit stress to pillar stress, and not to beam stress of $7\frac{1}{2}$ tons per square inch.

Loads on Roofs.—With regard to loads on roof trusses the author states: "Under the 1909 Act an allowance for wind-pressure as a *vertical* load upon the beams and stanchions must be made"; and he

further says, "So that in most cases we are compelled by the Act to provide for *vertical* load due to wind about four times as much as can occur." Well, that is rather interesting, because I have read the Act many times, and that word "*vertical*" does not occur in it at all, not in that connection; the Act does not say "*vertical*," and that is quite possibly the author's inference. In further reference to roof trusses the author says the allowance for wind-pressure must be 28 lb. per superficial foot measured on the slope. Persons have before now objected to fixing an arbitrary load of 28 lb. whatever the slope, but I would point out that as the slope gets flatter, the snow load gets greater, and the wind load gets less, and as the roof gets steeper, it catches more wind and less snow. I consider the small load of 28 lb. per square foot not unreasonable in any case.

Pressure on Concrete.—The author speaks also of the pressure on concrete, and he says that it seems rather strange on the face of it that concrete employed under highly favourable circumstances should be limited to a working stress of one-sixth of the crushing strength at three weeks; while concrete of similar materials in reinforced beams, where the maximum stress is on the extreme surface of the beam, may be, and often is, stressed up to 30 to 40 tons per square foot." I would point out that this would come up for consideration when by-laws as to concrete are revised, but the Council could not make any change in by-laws for concrete when they are only seeking powers for steel-frame buildings, and when that time comes I trust we shall get more support, or as much support as possible.

Brick Pillars.—With regard to the pressure on brick-work in cement, I would point out to you that you can put this load on pillars having a height of 12 diameters, and I think that a pressure of 12 tons per square foot, on Staffordshire bricks on a pillar of 12 diameters, is quite enough. When we get more scientific we will probably give a table of loads and calculate the eccentric stresses on brick pillars, and then you can put a little more on for short lengths.

With regard to the question raised by Mr. Perkins, I would point out that the requirement about gusset plates arose out of a suggestion of this Institute in 1904. Although the clause was vague in many directions, yet it was held that the load meant *all* the load and not *part* of the load or *some* of the load. As to any interpretation of the Act, I think I must leave that to the statutory authority.

There is another point raised by Mr. Perkins of which I wish to speak—as to the meaning of foundations. I would point out to him that the London County Council (General Powers) Act, 1909, speaks of the pressure on concrete foundations, and that may be in harmony with the other paragraphs quoted by Mr. Perkins. With regard to his wish that the load on roofs might be advisedly made a little heavier I would point out that there is provision in Section 22 (18), "Provided that if the superimposed load on any floor or roof is to exceed that hereinbefore specified for such floor or roof such greater load should be provided for."

Now, it will be acknowledged that the last word on steel construction has not yet been written, but what has been written will stand for some time to come; and when in the course of time this like all other Acts comes up for revision, might I ask you now, in advance, to support and co-operate with the building authority in their endeavour to obtain the best laws possible—legal

enactments in harmony with natural laws, and practical rules for the guidance of busy builders desiring to do sound work?

Mr. J. R. SHARMAN said that he proposed to speak as an engineer, and would deal in a short way with the general questions that had been raised in regard to the relation between the engineer and the architect. Any one trained as an engineer or architect visiting the United States for the first time would be very much struck with the general view of the high buildings in New York as seen from the river, say, against a sunset sky—great masses of buildings, many of them over 300 feet high; another view, to be had while walking in the business streets of New York, made one feel like a very small unit looking up at these great heights. His point was that there was a dignity about those high buildings, although possibly the American architects had not got the best possible out of what they had done. As an engineer the temptation to him was to cover a good deal of the ground that had already been gone over in discussing the details of Mr. Jackson's Paper, but he would rather say that he thought the engineer's function was safety combined with economy. That was as short as he could put it. It was the way the engineer was trained to look at things. The architect's function was a wider one; and he thought in steel construction there was a very wide field for the architect in proportioning and beautifying buildings of this type.

He would like to say a word or two about steel. He had had a good deal to do with steel all his life, and when one had used steel, and possibly misused it—for instance, take an ordinary 10×6 joist, bent for an oriel window to a 15-ft. radius in a hydraulic press—he could not say he recommended treatment of that sort—but it had been done, and such joists put in, and they carried their load. Also, if one had seen cases of failure of a building—a building, for instance, with steel stanchions and girders which for some reason or another failed—one would see the effort the steel had made to stand up to extraordinary stresses it was not meant to have, and that gave one a very wholesome respect for steel as a building material. He thought it was the architect's function to explain and dignify the use of steel in buildings. There were buildings one saw which might have a heavy front of stone columns apparently standing on nothing but plate glass; he did not think that was good design. He thought that was a case where a steel-frame building had not been used in the form one would like to see it.

He should have liked, with a little more time, to say a word about the combination of steel and concrete. Reinforced concrete might be roughly defined as concrete in which there was about 2 per cent. of steel, the steel being designed so as to give the concrete the necessary tensile resistance to correspond with its high compressive resistance. But there were other ways of using steel and concrete in combination, and he thought that possibly the material of the future might have a larger proportion of steel and a smaller proportion of concrete, and in that form it would be, perhaps, more correct to describe it as reinforced steel. It often arose in this way, and he thought the last speaker must often have had the point before him. In the case of a slender steel column of ordinary joist section, and it might be of long length, the allowable stress would be very small on the steel. If such section were built into a wall, or if it were encased in concrete, as it must be for fire protection, they were not allowed to take any credit for the

support it got from the fire protection or the wall; but as practical men they knew that it would be perfectly safe to be allowed to increase—he would not say to put the load directly on to the concrete reinforcement, but to be allowed to increase the working stress of that column, because they had for practical purposes increased its stiffness in proportion to its length, and he believed he was right in saying that the building laws of New York had been amended so as to take that into account, and he hoped that matter would be discussed in future amendments to the building laws in London.

There were various points he would have liked to refer to in Mr. Jackson's Paper, but he would only touch upon two—viz. deflection and eccentric loading. He thought he was right in saying that deflection was very often apt to be misunderstood. For a given working stress deflection was a function of depth, and if the construction were shallow in proportion to span, the girders must deflect before they could take up their stress, and they might deflect perfectly safely without any risk whatever. So that the practical point in deflection in buildings seemed to him not to be in the steel, but in the materials with which it was associated. If there were an appreciable amount of deflection, cracks appeared in the ceilings, and it was those points which had to be considered in deflection rather than the actual steel or carrying material. In regard to eccentric loading, this was a highly technical question that would take a long time to discuss fully. He thought, from a good many years' experience of designing and making steel buildings, that the eccentric loading of stanchions had become rather a nightmare. The importance of it was, perhaps, exaggerated. It really depended, in his view, so much on the type and form of the connections. He admitted that the District Surveyor's formula was a very simple one; the way it was got at, and what it meant, was obvious. But if large brackets were taken for wind bracing, and if the bearing of the girders was taken in the centre of such a bracket, they would get a bending in excess of what actually took place in the stanchions. He agreed with a good many speakers who had referred to the importance of figures being read with experience, and if designers and makers were tied down to a certain formula with which every kind or class of building had to comply, he did not think the result would be satisfactory. A certain margin must be left to people's experience and knowledge of the difficulty of ascertaining exactly the stresses in certain cases. That was the note on which he would like to close—that engineers ought to know, and to understand, the principles by which formulae are derived. But, speaking to architects, he thought they would agree that the *essential* might often be lost sight of by adhering too strictly to formulae and figures.

Mr. P. J. WALDRAM, F.S.I. [*Licentiate*], sent the following contribution, part of which was read to the Meeting by Mr. Guy Dawber:—

May I be permitted to draw particular attention to the statement with which Mr. Bernard Dicksee's Paper commences: viz. that according to Counsel's opinion as taken by the District Surveyors' Association "*If as a fact the loads and stresses on a building are transmitted through a skeleton framework of metal in the manner described, the whole of the provisions of the 1909 Act apply*"? This important statement is even more significant than appears at first sight. In the majority of large buildings such loads and stresses as are not taken by the walls are transmitted through some form

of skeleton framework; and if the opinion of the learned Counsel be correct the provisions of the 1909 Act would certainly apply to all such buildings. If so it is difficult to see why it should not apply to all cases where stresses are taken by metal beams and columns. Assuming, however, that it only applies to brick shells with internal metal framework, it would appear that the sooner it is tested in the Courts the better. The official tabulation of calculations, jointly propounded, I understand, by the Science Committee of this Institute and the District Surveyors' Association, could be presumably enforced by District Surveyors under the Act, and if the Act be given a practically universal application, it is necessary to consider the labour involved in such tabulation. There may be men who revel in figures, there may be architects who can afford to purchase these forms and pay draughtsmen to fill them up, there may be District Surveyors who will check all the calculations they contain; but any tabulation of calculations which involves any avoidable figures scarcely appeals to one who has had much experience of engineering calculations. My experience is that the more figures and repetitions of figures a draughtsman writes down, the greater the chance of those silly errors which no intellectual person ought to make, but which anyone does make with surprising regularity when suffering from the mental indigestion caused by over-indulgence in simple stodgy arithmetic. Structural engineering is commonly supposed to be a sort of tedious juggling with figures and higher mathematics; whereas really it is nothing more than trained structural common-sense, only aided by figures and data. It is fatally easy to overlook important and even vital considerations when checking a mass of figures; and if one wished to secure some relaxation of the regulations for the benefit of one's structure without asking for it, one would be strongly tempted to show it boldly in the middle of an official form.

Criticism of the 1909 Act in 1913 seems a little belated. Original and revised drafts were published in the technical press when it was under consideration, but one does not seem to recollect any very energetic criticism at the time. That criticism would have been unwelcome I can scarcely believe, for I remember writing to the Surveyors' Institution upon one or two points and finding them altered in the second draft. Even if all the points raised in the first paper be justified, surely it should have been appreciated, *before* the regulations were made, that even if our present knowledge of structural matters be as perfect as our young scientific draughtsmen believe it to be, yet legal draughtsmanship is not infallible, and the institutions should have insisted, in season and out of season, with a little of that strenuous ardour of propaganda which is now customary, that these regulations and that all present and that all future regulations and by-laws should contain a clause under which they should come up automatically for periodical revision. A short Act making this compulsory in all by-laws would appear to be a form of Parliamentary activity well worthy of the attention of the Councils of this and other large institutions. It would probably relieve our chronic grievance against by-laws. Most telling arguments in favour of such a course are to be found in the Act we are considering, when viewed in the light of the proposed regulations for reinforced concrete made under it in December 1911. Clause 18a of the latter reduces the wind pressure of 30 lbs. to 20 lbs. viz. we need only

design for a gentle breeze of 80 miles per hour. It further stipulates that the pressure (28 lbs.) of wind, snow, and ice shall be calculated as acting in a direction normal to the roof slope, instead of vertically as in the parent Act. The permissible progressive reduction of floor loads on columns is also altered from 5 per cent. to 10 per cent. These important alterations, excellent in themselves, surely form most eloquent testimony to the need for periodical revision of all by-laws. If the capital of this great Empire needs to alter its mind upon questions of elementary structural data within the short space of two years, it scarcely seems unreasonable to ask that rural and urban by-laws should be revised, say, every four years.

If I have not already taken up too much time I should like to refer to a few points in Mr. Jackson's paper. I will do so as briefly and as generally as possible. His suggestion that an inspector should watch every operation from the cupola onwards is rather Utopian for ordinary work, and he does not mention that all mills rolling British Standard steel roll their names on to every section and piece. The well-deserved and hardly earned reputation which those mills are rightly jealous of is by no means a negligible factor.

The description of the structural design of a grillage is not very clear. The various projections of the grillage beams are usually calculated as simple cantilevers subjected to the distributed load of the upward reactions, neglecting the strength of the surrounding concrete. The reason for any more complicated treatment is not apparent. As, however, the author speaks of designing the grillage beams first and subsequently determining the size of the concrete, he is possibly alluding to something different from what is commonly known and widely used as a grillage foundation, viz. a grille of rolled joists in two or more layers laid at right angles to each other, grouted in solid with concrete and used to distribute the heavy load of a stanchion over a large area without incurring the expense or weight of a deep block of mass concrete.

The author states that structural steel should be painted or cement-washed before delivery. I would suggest that coating with boiled oil only quite prevents early rust and does not hide up loose scale, rust, and other defects in the way that paint or cement-wash does.

The author's trouble over floor loads is an old one, and is due to the absence of any provision in our general practice and by-laws of distinction between local and general loads for floors not used for storage. It is a point to be remembered in warehouse floors that articles easily handled are more dangerous than heavy cumbersome ones. One would rather see on a floor lithographic stones that can only be lifted by two men than small ones which a boy can pile up into high stacks; and books are more dangerous than either because they seem so harmless.

The author is surely a little unreasonable in complaining of the 15-foot reinforced beam because it did not deflect more than $1\frac{1}{2}$ inch before breaking. One would think that a reinforced concrete beam of ordinary proportions with ordinary fixed ends was doing itself rather well in the way of distortion if it deflected one-tenth of that amount. If ordinary steel beams were tested until they deflected $1\frac{1}{2}$ inch in 15-feet, I fear that many structures would "finish on the ground" physically as well as in design.

The author rightly criticised the deflection stipulations of the Act, but his own suggestion of a deflection

limit of $\frac{1}{4}$ of the span applicable equally to short deep girders and long slender ones is scarcely more attractive.

A little play must always be given to girders fitting between stanchions, or they could be never got in, and the web cleats are therefore packed. The author suggests that the seating cleats should be packed instead in order that the vertical shear may travel down the leg of the cleat (see fig. 4). This would double the difficulty and cost of erection and weaken the joint as well, tending to pull off the heads of the rivets. Any idea that the cleat would bend over such a short radius is quite wrong, as can easily be seen by calculation or by putting a piece of $\frac{1}{2}$ -inch plate into a press and noting the power required to bend it when cold over a short radius.

A short time ago I had to devise means of transporting the material of a very large frame building including 75-foot arch trusses over a 40-foot gap in a pier. On arriving at 4 A.M. on a Sunday morning, the only time available for bridging the gap, I found that one of the two old girders temporarily slung across the gap was bearing loosely at one end on the edge of a $\frac{3}{4}$ -inch cover plate projecting some distance from the head of a column, the end of the 40-foot girder being some 6 or 8 inches from the column. The foreman was almost hurt when I insisted on a couple of short bolts being put in to make sure, and subsequent trials of the effect of a heavily loaded truck bearing on the middle of a similar $\frac{3}{4}$ -inch plate showed that there was no fear of the plate bending and letting the girder slip into the sea.

The author strongly advocates hydraulic in preference to hand riveting. It is certainly cheaper, but he does not mention the danger of hydraulically closing very hot rivets too quickly. The subsequent cooling leaves the rivet in severe tension so that heads will sometimes fly off. A rivet is closed more gradually by hand, and is almost cold when the operation is over.

The author advocates the stanchion as shown in fig. 13, because the beam webs bear directly on the metal; but surely that arrangement forces the inevitable deflection of the beam to bend the stanchion in its weakest direction. On page 424 the author refers to a Section Modulus of 51 "square inches." This is rather misleading, and I would suggest the usual term "inch units" as preferable. I would venture to take exception to the statement that pillars with hinged ends are unknown in buildings. All cases of braced skeleton columns designed to resist secondary bending between the braces can only be placed in that category, as must also the different lengths of roof truss rafters. I was recently consulted with regard to unbraced columns carrying a water tank above a roof which were practically acting as the still more unusual type of columns with one loose end, and were alarmingly flexible under load until braced up.

The inside stanchion riveting shown in figs. 11 and 20 is unusual, and would appear to be liable to make the stanchion of unequal stiffness, and therefore, in long stanchions, weaker.

The use of turned bolts where connections cannot be riveted is also unusual. There is seldom any need to cut down the number of bolts, and six black bolts would surely be better than four turned bolts in a well-designed connection, and would cost less.

Some of the author's criticisms would appear to be on behalf of 1-inch rivets. In many years of practice I have only used 1-inch rivets twice—once in the case of a very large railway bridge near Leeds where the cross

girders were about 40-feet span, and once, if I remember rightly, in a reconstruction under traffic of a bridge in Devonshire where I was hampered in design by the excessively small constructional depth available. Situations requiring riveted flanges or connections 5 inches thick are equally rare.

The author's coefficients of wind pressure are apparently based on Hutton's old formula, the accuracy of which would appear to be largely discounted by the results of extended experimental research on the effect of wind on roof slopes at the National Physical Laboratory.

The use of folding wedges of oiled steel in shoring instead of the usual hardwood is new to me. Considered with regard to the critical angle of slipping of oiled steel surfaces upon each other, one would prefer them rusty, or at least very firmly secured, to prevent any danger of slipping under shocks or vibration.

The authors have presented for critical discussion so many highly interesting points that the expression of one's appreciation of the Papers must be condensed into a hearty support of the vote of thanks.

Mr. FRANK N. JACKSON [*Hon. A.*], replying to some of the points raised during the discussion, said that with regard to wind bracing, referred to by Mr. Perkins, he had in a recent large building introduced wind bracing, and he generally attempted to get vertical diagonal bracing in systems forty to sixty feet apart. He persuaded the architect it was absolutely essential to the soundness of the structure, which was a very lofty one, and it had been adopted. Years ago, in a building known as Gloucester House, at the bottom of Park Lane, a complete system of tower bracing against wind was adopted. There they had put vertical stanchions in the outer wall, and internal stanchions about fourteen feet away, and these, he thought, were joined with vertical diagonal bracing with rigid gusset plate connections on the flanges.

As to the grillage beams, these must act as pillars; the load must be carried from the stanchions down to the concrete; they could not depend on the concrete which was filled in between the joists fitting them absolutely after the concrete had shrunk or dried. The web of the beam must act as a pillar. The projection of the grillage beams beyond the base of the stanchion should not as a rule exceed three times the depth of the beam. The distributed load on the underside of the grillage beams will be of varying intensity, depending upon the pressure upon the earth, the deflection of the concrete foundation, and the deflection of the grillage beam.

As regards the painting or coating of steel work before delivery, he had seen it done in many ways, but he found the cement was generally gone after a few storms, and the work had got rather rusty and the rain found its way inside the box girders and stanchions. He thought there was something to be said for coating stanchions with one coat of oxide paint, and by the time they came to casing in their work they could put on a second coat of paint or cement, preferably cement, and the steel work would still be in good condition.

A MEMBER: Do you take off the mill scale first?

Mr. JACKSON: I take off the paint.

THE MEMBER: Clean the steel?

Mr. JACKSON: Yes.

With regard to floor loads, he did not believe in taking them light, but in a building they had designed for lately it certainly came very heavy, carrying 70 lb.

per square foot super-load for bedroom floors. In a report of the Austrian Society of Engineers and Architects for 1899, the floor super-loads recommended were on mansard rooms 30 lb. per square foot, and on residence rooms generally 50 lb. These figures were arrived at after a careful inquiry. This weight on the floors of residences appears again in the Prussian Government Regulations governing the use of reinforced concrete, where they take a sample dwelling-house floor, and give a super-load of 250 kilogrammes per square metre, which amounted to 51 lb. per square foot; so that our load was 40 per cent. heavier than that. It seemed to him that if that was ample for the Prussian Government it should be sufficient for us. With regard to the question of floor loading being exceeded owing to material stored on the floors during erection for want of proper supervision, he was once called to an office floor he had designed and found 3 feet of ballast stacked on it. Naturally, the girders were injured, and the floor was giving way; it was time it did.

With regard to the trimmed connection of one plate girder to another, he quite agreed with Mr. Perkins that the girder should not rest in the root of the main beam, and the connection should depend entirely on the riveting, which wanted carefully designing to suit the load.

As to gusset plates, he certainly always understood the rivets had to be sufficient to carry the whole of the load to the base plate. He was very pleased to hear they had not to carry everything on these gusset plates when the grillage beams were directly under the stanchion.

As to loads on roofs—stands might be erected on roofs, and so might other things; but they were not designed primarily for such purposes, and should not be designed for such accidental loading, besides which it became very expensive. He had no object in keeping the weight down except in saving unnecessary expense. As to load on concrete, he agreed with Mr. Perkins.

With regard to Mr. Cubitt's remarks, he might mention that when this Steel Frame Act was first talked of, it was suggested at a meeting of the Science Committee that after some little experience of the Act had been gained, someone should write a paper giving some experience of the use of the Act, and pointing out its points and defects. That was the origin of his Paper. It did not pretend to be a complete treatise on steel frame construction; it could not be done in the time; it would require a small volume to deal with all the points raised. As to the architectural features, engineers could only endeavour to persuade their clients to adopt bold and simple lines of construction, carrying the loads as directly as possible to earth. They were often successful in getting alterations made which enabled them to stick to such lines where there could be no ambiguity in the stresses. The engineer and architect worked together in this. The architect, in order to get the best results, would sometimes get out a rough set of drawings and consult the engineer as to how the lines of construction were going, and in consultation together a building was designed, as far as could possibly be, on the best lines as regards art and construction. The engineer attended to the construction side, and the best result was obtained by collaboration in this way, each man sticking to his own job. As regards the principles of designing steel construction, and all other construction, the basis of the whole thing was the old principle of the lever arm. It was very simple to understand in its original form, and

he felt sure if young architects—he knew generally what their knowledge was—were taught better in these subjects, they would understand what they were doing and not depend on a mass of formulae as to the meaning and origin of which they had no idea.

He agreed to a great extent with what Mr. Todd said about the District Surveyors' forms: he hoped they should never be compelled to use them.

As to the eccentric loading of stanchions, he had found Surveyors stick fairly rigidly to the letter of the law. Their duties were very clearly laid down in the Act. He had had a stanchion containing 100 square inches rejected because a corner of one flange was three-tenths of a ton in excess of the very moderate stress allowed. He agreed with Mr. Etchells as to the grillage beams upon the concrete. The pressure on the under side of the beam was not uniform, it was a distributed load, but of varying intensity. The thing wanted working out carefully for different thicknesses of concrete. It depended upon the pressure on the concrete and on the earth. The engineer did follow this practice of wedging up his stanchions as far as possible, wedging the grillages under stanchions. He at least got the long shaft of the stanchions up with three floors of steel work in before the grillage beams were finally grouted up, and he got everything well in bearing in that way. The design in grillage beams was very carelessly done; he saw one the other day with a grillage composed of three 7-inch by 4-inch 18-lb. rolled steel joists to distribute the load of a stanchion carrying 190 tons, which was ridiculous. About the stress on girders, and this 8-ton stress extreme fibres: of course, whatever the various societies said, $7\frac{1}{2}$ or 7 tons, it might be right, but the engineer must think for himself in these matters. As to eccentric loads on stanchions, there were many differences of opinion. He was sure it could not be contended reasonably that a stress of perhaps 4 tons to the square inch in a stanchion usually limited to 3 tons in the centre would cause failure or buckling, or any serious deflection in that stanchion. As to stresses in rafter backs, he should keep the stress within very moderate limits in the web of the tee bar, but where sections composed of a joist or two channels were used, as often occurs, rather higher stress could be used. As regards the wind pressure upon sloping roofs, he had been compelled to provide for this vertical load [Mr. ETHELLES: Shame!] and could speak with some experience. As regards Mr. Sharman's remarks as to deflection, it was also a function of the stress and depth. If they had a beam stressed to $7\frac{1}{2}$ tons, it used to be considered good practice under distributed load in ordinary sections not to exceed sixteen times the depth in span. At the same time, they might have a girder of which the span was thirty or forty times the depth, but if the stress were moderate the girder would not deflect more than what he thought was the best ordinary standard deflection, about one inch in 40 feet. It was entirely a question of suiting the stress to the span.

Mr. BERNARD DICKSEE [F.], in reply, said that the forms he had dealt with—for which, by the way, he was not personally responsible, although he had had a considerable hand in their preparation—had been rather severely criticised by some of the speakers, who frankly owned that they did not use them. He thought that whatever form the District Surveyors put forward, ninety-nine persons out of a hundred would say that they did not use that form. That alone was

justification for putting these forms forward. The object of the Act, as far as these calculations were concerned, was that the District Surveyor should be in a position to understand the loads and stresses that were to be put upon buildings. If the designers of steel-frame buildings made their calculations in fifty different ways, the District Surveyor's life would not be long enough to check the calculations of two or three of those buildings. With regard to the practicability of these forms, he could assure the Meeting that they had been used, and with very considerable success. When they were in embryo form, Messrs. Dawney used them in his district, and as a result a few improvements were discovered, and those improvements had been embodied in the forms. Mr. Todd suggested that all he wanted to know was the various loads applied in each particular place. The forms were made exactly for that purpose. The District Surveyor wanted to know the weight of the walls, otherwise he would not know what he had to calculate for; he wanted to know whether it was to be a distributed or concentrated load; whatever it was, the calculation must be shown in its right place. The same with the floors—and there Mr. Peach must take the responsibility of saying how many tons his machinery would place on the frame; the District Surveyor had to check him. If there was a concentrated load, one surely wanted to know the point of concentration. When it came to reaction, certain loads must be transmitted to the column, and they wanted to know which end of the beam was going to take five tons or which end was going to take ten tons. Was it not much easier for anyone having to make out these calculations to put them down where someone else who had to check them knew where to find them and what to find? As to the origin of the sheets, as they all knew, the United States of America was the cradle of this particular form of construction, so when the District Surveyors' Association started upon making out this form of calculation sheet they went to America for information, and they got a very large amount of valuable information from Mr. Gibson, who wrote a Paper* on the American method some fifteen years ago. These forms were afterwards sent to Mr. Gibson, and he (Mr. Dicksee) received from him a very complimentary letter on the result of their labours. He did not think there was any man in England who had had as much to do with this sort of thing as Mr. Gibson. Of course, the forms were complicated; when superimposed loads or dead loads were in question, the Act made a distinction, because in a building that was not a warehouse building there was a certain deduction allowed; 5 per cent. for each floor one went down was allowable for the superimposed load up to 50 per cent.; that took one down several stories, and was a very important factor in Mr. Jackson's 70 lb., because 70 lb. became 60 lb. a story or two lower, and 50 lb. a story or two further down. If the forms had not provided the possibility of that reduction they would be of no use. You could make the reduction if you please; if there was no reduction, you could ignore that space in the form altogether. It was exactly the same in other directions. If you had no concentrated load you did not want to fill in the form there. If there was no eccentricity of loading you did not want to fill in any column there. But many of the pillars were eccentrically loaded, and there must be a place where the figures

were to be put in. In five cases out of six one of the columns (that for the properties of the sections used) could be done away with altogether, but probably it was wanted in the sixth. As he pointed out in the Paper, having arrived at the maximum bending moment, they could derive from that the equivalent distributive load, and then they could turn to the tables provided in the pamphlet, or, if they did not go far enough, to the handbooks of Dorman and Long and the Cargo Fleet Company. Mr. Peach thought the R.I.B.A. ought to have been consulted. They were consulted; and this scheme was the joint work of the District Surveyors' Association and the Science Committee. With all deference to Mr. Peach, he thought the Science Committee was the right Committee, and not the Practice Committee. Mr. Etchells had referred to the sign for Section Modulus. He could assure Mr. Etchells that at the time these were made up the Concrete Institute table had no such sign. He had had put into his hand the other day, in connection with a meeting of the Concrete Institute, a revised schedule in which it did take a place, but that was only an interim report—he did not know whether it had been in existence in between the times.

MR. ETHELLES: I referred to the document dated 1908, the first Report which was published.

MR. DICKSEE: Then it dropped out in the later one we had. On that they adopted the usual sign Z. He saw that the Concrete Institute proposed a complicated sign. He thought when Mr. Etchells started that, he was going to criticise adversely the District Surveyors' Association's "one end fixed and one end hinged," but as he went further on, it seemed he was patting them on the back. He disliked those three columns in the arch. The Science Committee and the District Surveyors' Association talked the matter over and thought that centre column was the right one to apply. He thought it would be very much better if they had only one table applicable to steel pillars as they found them in practice. Mr. Faber had mentioned that he did not see wind bracing dealt with in the sheets. If they had dealt with wind bracing in those sheets they would have laid themselves open to additional criticism as to having complicated them still further. It would be found that the matter of wind bracing had been dealt with in the District Surveyors' pamphlet. They suggested the calculation should be made on a separate sheet, and there was this note at the bottom: "The stresses on any internal framing should be calculated as though the building were a braced cantilever set on end." A reference had been made to a question of cement wash or paint on steel. Personally, he did not like paint, it covered up too many sins; neither did he like cement wash put on too early. He preferred to see the work come on the job simply under a coat of boiled oil; the boiled oil would probably have disappeared by the time the steelwork had to be built in; the application of the steel brush would take off the mill scale, and the steel could then be given a coat of cement wash. That was the best way of protecting the steel. Of course, we want to wait another fifty years before we know the result of what we are doing now; but as far as his experience went, that seemed to be the best way. In conclusion, he again expressed the wish that members should take the forms home and study them: they would find they were not such nightmares as some of them imagined.

MR. PERKINS asked leave to add a word about the

* "Fireproof Construction of Buildings in the United States," by R. W. Gibson [*JOURNAL*, 10th December 1898].

forms. He had had calculations submitted to him on foolscap for two buildings in his district; in one case the weight of the walls was left out, and in the other the floors were omitted. If these forms had been used this could not have happened.

THE CHAIRMAN (MR. GEORGE HUBBARD, F.S.A., *Vice-President*), in bringing the proceedings to a close, said that as architects they could not do otherwise than admire the immense amount of skill and knowledge that had been shown by the authors of these extremely able Papers. There was, he feared, a feeling of antagonism between the architect and the engineer, but he hoped and believed that that feeling was vanishing. Certainly, if looked at from the architect's point of view, it ought to vanish. On this occasion engineers were invited to come forward and show architects how to build perhaps more economically, and certainly more scientifically; and from what had been said it seemed possible that architects would have to revise their designs for certain classes of buildings so that they should conform with the requirements of the steel-framed buildings, if this method of construction held out distinct and definite advantages. After all, architecture in the past had developed mainly through the introduction of new materials and new forms of construction. These factors had in fact exercised the greatest influence in the past on architecture; and if the engineers were now proving the advantage of new materials and new methods of construction, it seemed to him that architects would be only carrying on the tradition of the past by adapting their art to the new conditions. For many reasons he should not speak on the technical side of the subject. He regretted that the President was not present, as the subject was one with which he would have dealt with his usual ability, to the advantage of them all. The Institute was very grateful to Mr. Jackson and Mr. Dicksee, and they could take it from him that their Papers would be greatly appreciated by members. A vote of thanks had been passed to them at the last Meeting, but he felt sure that he should only be expressing the feeling of the Meeting in thanking them again for so kindly coming and giving their replies to the valuable discussion that had taken place that evening.

MINUTES. XIII.

ADJOURNED GENERAL MEETING (ORDINARY).

At the Adjourned General Meeting (Ordinary) held Monday, 28th April 1913, for the discussion of the Papers on MODERN STEEL BUILDING CONSTRUCTION [JOURNAL 26th April 1913]—Mr. George Hubbard, F.S.A., *Vice-President*, in the Chair; 13 Fellows (including 4 members of the Council), 17 Associates (including 1 member of the Council), 4 Licentiates, 1 Hon. Associate, and visitors—the Minutes of the Meeting held 21st April, having been published in the JOURNAL, were taken as read and signed as correct.

The Papers having been discussed by Messrs. W. G. Perkins, Horace Cubitt [A.], John Todd, C. Stanley Peach [F.], P. J. Waldram [Licentiate], E. Flander Etchells, J. R. Sharman, and Oscar Faber, the authors of the Papers, Messrs. Frank N. Jackson [Hon. A.] and Bernard Dicksee [F.], replied, and the Chairman expressed to the latter the thanks of the Meeting for their attendance that evening.

The proceedings then closed and the Meeting separated at 10.30 p.m.

SUB-CONTRACTORS: LIABILITIES OF ARCHITECT, CLIENT AND BUILDER.

The publication in another column of the report of the case of *Ramsden & Carr v. Chessum & Sons and Ward* suggests some comments on the present position of this important matter which may perhaps be of service to readers of the JOURNAL. The effect of the case may be conveniently summarised as follows:—

Where the architect obtains an estimate for goods from a merchant or sub-contractor and accepts it, the use of those goods by the builder, upon the architect's instructions, when delivered upon the job, does not carry with it any implied promise or undertaking on the part of the builder to pay the merchant or sub-contractor for them. Moreover, the architect is not, under such circumstances, the agent either of builder or client, so as to render either of them liable. As to whether under these circumstances the architect has rendered himself personally liable, the case does not determine.

A perusal of the report shows upon how fine a thread hangs the distinction between obvious fact and legal proof. To suggest that a builder who receives upon the job, and fixes, a large quantity of goods, many of them specially made, could be entirely ignorant as to whence they came or who was supplying them, appears on the face of it absurd, yet it is decided that there was no legal knowledge sufficient to impose an implied liability upon him to pay. A point in the case of special interest to the architect is the statement of Lord Justice Vaughan Williams that "he was not prepared to say that Ward (the architect) had made the contract on behalf of the building owner." As the architect both obtained and accepted the estimate, this view would appear to be entirely at variance with the case of *The Crittall Manufacturing Co. v. London County Council*. In that case the architect, although he only obtained the estimate and did not accept it, was held to have bound the building owners on the ground that the goods were supplied for their benefit and not that of the builders. The case has been variously interpreted by architects, and, indeed, the manner in which the judgment was delivered and reported affords ample reason. Diligent study, however, of the verbatim report does, I think, enable one to straighten it out, and it may be useful to state briefly what was decided and in what manner the case differs from that already commented on above.

The architect obtained the estimate from the sub-contractor. He did not accept it himself, but subsequently instructed the builder to accept it. The builder thereupon wrote a letter to the sub-contractor, the text of which is not given in the report, but which clearly was intended by him as an acceptance, the word "accept" being contained in it.

The learned Judge pointed out that so far nothing binding upon either party had resulted, seeing that a contract cannot be established by one person asking for and obtaining an estimate, which estimate is addressed to him, and a *third* party accepting it.

The letter in question, however, although it failed in one respect, proved to have value in another. The learned Judge took the view that the letter, though it did not constitute a valid acceptance, might, in the light of the subsequent action of the sub-contractor, be taken to be a "proposal" by the sub-contractor to supply the builder with the goods on the terms originally quoted to the architect. The Judge also, taking the view that the evidence as to the builder's subsequent attitude and actions sufficiently demonstrated acceptance of that "proposal," held that a good contract was thus established between the builder and sub-contractor.

This having been decided, the next step of transferring the liability from the shoulders of the builder to those of the building owner easily followed, being governed by the case of *Hobbs v. Turner*, 18 T.L.R. 235 (C.A.), tried in 1902, which established that when a builder enters into a contract for work or goods with a sub-contractor by direction of the architect, the client, as the person for whose benefit the goods or work are supplied, is the real principal and liable for payment.

It will be gathered from the above that the idea largely prevalent in the profession that the *Crittall* case established some new principle or precedent is erroneous, since it went no further than *Hobbs v. Turner*. What, however, was remarkable and disturbing in the *Crittall* case was the interpretation by the learned Judge of a letter, intended to be an acceptance, as a "proposal." The course of reasoning by which, according to the verbatim report, that view was arrived at is so extremely difficult to appreciate, that, on public grounds, it is to be regretted the London County Council did not see their way to appeal.

Perhaps the most instructive point in the case to architects is the pronouncement of the Judge, to which I have already referred, namely, that no binding arrangement between any of the parties can be made by architects obtaining estimates addressed to themselves and instructing third parties to accept them.

The safe course would appear to be for the architect to obtain the estimate in the first instance from the sub-contractor, at a convenient date to see that it is repeated to the builder, and thereupon instruct the latter to accept it. If at the same time the architect obtains a letter from the sub-contractor stating that he looks to the builder alone for payment, and under no circumstances to the client or architect, no liability could be imposed on the two last mentioned.

E. GREENOP [F.].

ANCIENT MONUMENTS CONSOLIDATION AND AMENDMENT BILL, 1913.

This Bill, re-introduced this session by Lord Beauchamp, was read a second time on 24th April. It is similar to the Government Bill of last session, but with some of the recommendations of the Joint Committee of both Houses, which reported on the three Ancient Monuments Bills of last year, added in a modified form. An entirely new feature is the non-retention by the Commissioners of Works of their former power of purchasing a monument with the sanction of the Treasury, a power still to be retained by the local authorities. The machinery for the protection of ancient monuments by a Preservation Order placing the monument under the protection of the Commissioners of Works for eighteen months, to be confirmed later by means of a private Act of Parliament, is still retained. The Joint Committee proposed that the Preservation Order should be confirmed after it had lain on the table of both Houses for thirty days and neither House had presented an address against it. When Parliament was not sitting some provision would be required to save a monument in imminent danger when delay would be disastrous, and the Committee mentioned Sir Schomberg MacDonnell's suggestion of proceeding by an Order in Council. By retaining their original proposal of confirming the Preservation Order by a private Act, the Government gives the owner more time and a better opportunity of presenting his case than does the more expeditious method suggested by the Committee. All ecclesiastical buildings in use for religious purposes are excluded from the machinery of a Preservation Order, though the Joint Committee recommended the inclusion of the Cathedrals. The right of pre-emption at a price fixed by the Commissioners of Inland Revenue attached to the Preservation Order is transferred from the Commissioners of Works to the local authorities. This sub-section was cut out by the Joint Committee on the grounds that where a monument is protected from injury it mattered not to the Government who owned it, while on the other hand it might be in the public interest for a monument to be transferred from a poor man's custody to that of one well able to maintain it. The Committee proposed an amendment by which the owner of any ancient monument as defined by them had first to obtain the consent of the Commissioners of Works before touching it. This is modified in the present Bill into a requirement of one month's notice of any alterations to certain monuments, to be scheduled in the future, under a penalty of a fine of twenty pounds. This provision, which is to give the Commissioners of Works the opportunity of making a Preservation Order before any injury is done to a monument, might be usefully employed with regard to ecclesiastical buildings, which are not excluded from

this part of the Act, by enabling public attention to be called to any detrimental proposals. It is evidently necessitated by monuments in the less accessible parts where public attention is not so likely to be called to the injury to a monument. In such a case the fear of a fine of twenty pounds may prove sufficient. The greatest inducement for the evasion of giving the required notice would be the wish to obtain vacant possession of a valuable site by destroying the monument on it. Here a fine of twenty pounds would not be sufficient, but the probability is that public attention would be drawn early to the attempt, and a Preservation Order would issue. Public access to monuments under the protection of the State or of the local authorities is to be under control of the Commissioners of Works or the local authorities; but, where the deed of guardianship so provides, the public shall not have access without the consent of the owner. Last year's Bill made access dependent on the consent of the owner without it being necessary to have this specially provided for in the deed. This the Committee proposed to alter by making the public's right of access compulsory. The recommendation of the Committee that a separate Advisory Board should be appointed for Scotland and one for Wales is met by giving the Commissioners of Works power to constitute them if and when they think desirable. The Advisory Board may give advice free of charge, except for out-of-pocket expenses, to an owner of an ancient monument. The Committee's amendment made it compulsory on the Advisory Board to give advice free of charge when invited and said nothing about the rather vague item of "out-of-pocket expenses." Two new clauses following the amendments made by the Committee are now included. The first gives permission, with the consent of the Local Government Board, for the relaxation of by-laws in order to permit the erection of buildings in harmony with other buildings of artistic merit, provided they are erected with due regard to sanitation and safety from fire. The second permits the making of by-laws to prohibit or restrict the display of advertisements outside ancient monuments detrimental to the amenities of the locality. "Outside ancient monuments" will require more strictly defining either in the Bill or by the law courts if any good use is to be made of this clause. For County Council in last year's Bill is substituted Local Authority, which term, by including Borough Councils, meets the recommendation of the Committee. The widely drawn definition of the Committee, of an ancient monument, which was to have included monuments immovable by destination, has not been inserted in the Bill which retains last year's definition confined to structures or erections. Power is now given to the local authority to impose a rate, and also to borrow money, for the purchase and upkeep of an ancient monument.

W. J. DAVIES [A.].



9 CONDUIT STREET, LONDON, W., 10th May 1913.

CHRONICLE.

The Annual Elections : New Nominations.

The following nominations have been made by members in accordance with By-law 33 :—

As Members of Council.

ADAMS : HARRY PERCY [F.].

Nominated by George H. Oatley, Percy S. Worthington, James S. Gibson, Francis Hooper, George Hornblower, C. E. Mallows, William A. Pite, *Fellows*.

BUTLER : JOHN DIXON [F.].

Nominated by Henry Tanner, W. Bevan, H. D. Searles-Wood, W. E. Riley, *Fellows*; J. G. Stephenson, H. Bradfield, Alex. Cowie, *Associates*.

DOWNING : H. P. BURKE [F.].

Nominated by William A. Pite, R. Phené Spiers, Leonard Stokes, John W. Simpson, Walter Tapper, E. Guy Dawber, *Fellows*; Noel W. Hadwen, Walter Millard, *Associates*.

HORNBLLOWER : GEORGE [F.].

Nominated by E. Guy Dawber, Edwin T. Hall, Paul Waterhouse, H. Percy Adams, Herbert W. Wills, C. Wontner Smith, Henry T. Hare, *Fellows*.

KEEN : ARTHUR [F.].

Nominated by Ernest Newton, A.R.A., E. Guy Dawber, Gerald C. Horsley, Henry V. Ashley, F. Winton Newman, Walter Cave, W. Curtis Green, *Fellows*.

REILLY : CHARLES HERBERT, M.A. Cantab. [F.].

Nominated by Halsey Ricardo, John Slater, E. Guy Dawber, W. R. Lethaby, F. M. Simpson, W. Curtis Green, Ernest Newton, A.R.A., *Fellows*.

WILLS : HERBERT WINKLER.

Nominated by Edwin Cooper, Herbert Wigglesworth, David Barclay Niven, H. Austen Hall, *Fellows*; John Anderson, Edmund J. Bennett, Henry A. Porter, *Associates*.

As Associate-Members of Council.

ANGEL : ROBERT JOHN, M.Inst.C.E. [A.].

Nominated by Henry Tanner, Sydney Perks, H. D. Searles-Wood, W. E. Riley, *Fellows*; James Ewing, R. J. Tall, J. M. Scott, *Associates*.

DAVIDGE : WILLIAM ROBERT, A.M.Inst.C.E. [A.].

Nominated by Sydney Perks, W. Bevan, F. E. P. Edwards, H. D. Searles-Wood, *Fellows*; H. B. Mackenzie, Edward E. Barks, B. Ernest Bayley, *Associates*.

PAPWORTH : ALFRED WYATT [A.].

Nominated by R. Elsey Smith, Arthur Crow, Wilfred J. Harcastle, Arthur Ashbridge, Alfred Conder,

Fellows; Henry Lovegrove, Ernest Wm. Lees, *Associates*.

As Associate-Member Art Standing Committee.

PAPWORTH: ALFRED WYATT [A.].

Nominated by R. Elsey Smith, Arthur Crow, Wilfred J. Harcastle, Arthur Ashbridge, Alfred Conder, *Fellows*; Henry Lovegrove, Ernest Wm. Lees, *Associates*.

As Member of the Practice Standing Committee.

MARKS: FREDERICK WILLIAM [F.].

Nominated by Matt. Garbutt, Edw. Greenop, George Hubbard, C. Stanley Peach, W. Henry White, H. D. Searles-Wood, Sydney Perks, *Fellows*.

Architectural Training : The Atelier.

Mr. Reginald Blomfield, A.R.A., responding to the toast of "The Royal Institute of British Architects" at the Annual Dinner of the Architectural Association, and referring to the question of architectural training, gave it as the result of his observation that the standard of design in this country amongst the younger men has steadily advanced, and he attributed the advance to the better methods of training of the present day. Speaking of certain modern developments, he said there was always a tendency under the conditions of modern civilisation to rush to new things, and sometimes they did not take stock of what they had. There had recently been started a very important undertaking in the way of the atelier, and he thought that many believed they had in this a panacea for all the shortcomings of modern architecture. He thought, however, there had been certain misunderstandings as to the position and functions of ateliers. He viewed the new enterprise with the most benevolent interest, and thought that, if properly handled, it might play a very valuable part in their system of training in architecture; but there must be no misunderstanding as to the precise position and function of the atelier in architectural training. Some of the indiscreet advocates of the system had announced that in this they had the equivalent of the great *Ecole des Beaux-Arts* of Paris. They had, of course, nothing of the sort, because all ateliers and any atelier must centre round some great central school, and in Paris they centred round the *Ecole des Beaux-Arts*. Therefore, while this atelier might be a very valuable step in educational reform, yet it was not equivalent to the establishment of an *Ecole des Beaux-Arts* in the midst of them, because the two were supplementary to each other. The atelier without the final school, or the final school without the atelier, was merely a cart without a horse. Another point was that in their enthusiasm for anything that would improve architecture in this country they were sometimes tempted to overlook what they had at their own doors. The advantage of the atelier was that the student's attention was concentrated on design, and he was not abstracted by having to attend to those disagreeable but im-

portant other matters in the education of the architect. Another thing was that the student was associated with other students who were bound up in the same objects as himself, and his designs were criticised by the competent head of the school. These were desirable things, but they had in one of the largest schools of this country those advantages, and one or two others. The school to which he referred was the Architectural School of the Royal Academy. In the first place, in that School, although the training was entirely gratuitous, yet admission could only be gained by the student who passed a test, and thus showed capacity to profit by the instruction given. In the second place, in that particular School the student associated not only with his colleagues amongst the architects, but with painters and sculptors. Many of them had for the last twenty years thought that it was most important that architects should be brought into touch with painters and sculptors at the earliest opportunity. It was better for the architects and certainly much better for the painters and sculptors. There was another point in regard to the criticism and supervision of the design. They might not think much of the members of the Royal Academy, but they must admit that they had shown some certain capacity, and, at any rate, they were men who had exceptional experience not only in designing, but in actually executing buildings, which was a very important point. He quite admitted that all of them, both inside and outside the Academy, felt that an extension of the labours of the School would come, and he had every hope that in the future that would be realised. He believed that last year a conference was held between the representatives of the Architectural Association and the architectural members of the Royal Academy, and it was a very satisfactory conference. The result was that increased facilities for admission to the Architectural School were arranged. He asked the students present to concentrate their education so as to qualify for the training they might receive in that School. But when he said that, he did not want to put it on the wrong issue. All schools, every school, working for the same end had the sincere sympathy of all serious-minded architects in the profession. This was a really very important matter. All the senior men of the Institute, as they must begin to call themselves, were very anxious indeed that the Association, which had a splendid record behind it, should continue to follow that road which for themselves was the result of many years of effort and experiment.

Reception of French Architects at the Institute.

A number of members of the *Société des Architectes Diplômés*, who have been the guests of the Architectural Association in connection with the exhibition of French Architectural Drawings at the A. A. Galleries, attended a reception in the Insti-

cute Library last Wednesday, by invitation of the President and Council R.I.B.A. A numerous company, including several ladies, was present to do honour to the French guests, and tea was served in the large reading-room. The Institute treasures in the shape of architectural drawings brought out for the occasion attracted a good deal of notice.

The Admiralty Arch Approach.

The question of the approach to the Admiralty Arch is being considered by a small joint committee consisting of Lord Plymouth, Mr. Reginald Blomfield, President R.I.B.A., and Mr. Lionel Earl, Secretary of the Office of Works, representing the Government; the Chairman of the London County Council, Lord Peel, and Mr. Andrew T. Taylor [F.], Chairman and Vice-Chairman respectively of the Improvement Committee, representing the London County Council; and Mr. Lyon Thomson, Mayor, and Mr. Somers Cocks, Ex-Mayor, and Mr. Davis, Chairman of the Improvements Committee, representing the Westminster City Council.

Sir William Lever's Gift to the Nation.

Sir William Lever [*Hon. A.*] has generously renewed his offer to present Stafford House to the nation, and the offer has been accepted by Mr. Asquith on behalf of the Government. Sir William's idea is that Stafford House, which until recently was the residence of the Duke of Sutherland, should be used to house the London Museum which was opened at Kensington Palace about two years ago. He further suggests that some of the rooms might be utilised for the purposes of Government entertainment to distinguished visitors. When the London Museum was established the State Apartments of Kensington Palace were temporarily placed by His Majesty at the disposal of the Trustees until a permanent home could be found for them. The Museum has made wonderful progress since its establishment, and the Trustees are in possession of thousands of things which they have been unable to show for want of space. Stafford House, with its more ample accommodation, will allow of the classification and arrangement of the exhibits in proper sequence.

Approaches to Parliament Square.

In the House of Commons last Monday,

Sir H. CRAIK asked Mr. Wedgwood Benn, as representing the First Commissioner of Works, whether the Government, having decided not to acquire the site of Westminster Hospital, would exercise the powers they possessed over the site in order to secure, in the public interest, such rearrangement of the frontage as might provide an adequate thoroughfare from the West to Parliament Square.

Mr. WEDGWOOD BENN: The First Commissioner considers that measures for improving thoroughfares are primarily matters for local authorities. If they should approve any particular method of rearrangement he will be glad to co-operate so far as his powers extend.

Sir H. CRAIK: Is it not the case that this is a special

matter interesting the nation at large, and also that the only person who possesses adequate powers is the First Commissioner of Works?

Mr. WEDGWOOD BENN: No, Sir. The powers of the local authorities avail in this as in all other cases to effect improvements in thoroughfares.

Sir H. CRAIK: Is it not a fact that the First Commissioner of Works has control over this site which does not fall to the local authorities?

Mr. WEDGWOOD BENN: He has a certain control over the area, but that does not affect the powers of the local authorities to effect improvements if they think it desirable.

American Architects' Registration Bill.

The recent Registration Bill presented to the New York State Legislature, approved by the Board of Regents of the University of the State of New York, and endorsed by the several New York State chapters of the American Institute of Architects, and by the New York Society of Architects, is of interest at the moment. The following are its provisions:—

Registered Architects.—Any person residing in or having a place of business in the State who, before this article takes effect, shall not have been engaged in the practice of architecture in New York State under the title of architect, shall, before being styled or known as an architect, secure a certificate of his qualification to practise under the title of architect, as provided by this article. Any person who shall have been engaged in the practice of architecture under the title of architect before this article takes effect may secure such certificate in the manner provided by this article. Any person having a certificate pursuant to this article may be styled or known as a registered architect. No other person shall assume such title or use the abbreviation R.A., or any other words, letters, or figures to indicate that the person using the same is a registered architect.

Board of Examiners.—The Regents of the University shall, within ninety days after this article takes effect, appoint a board of five examiners, who shall make rules for the examination and registration of candidates for such certificates, subject to the approval of the Board of Regents. Such board of examiners shall be composed of architects who have been in active practice in the State of New York for not less than ten years previous to their appointment, selected by the regents. Such examiners shall be entitled to such compensation for their services under this article as the Board of Regents shall determine, not exceeding in the aggregate the amount of fees collected from applicants for certificates.

Qualifications.—Any citizen of the United States, or any person who has duly declared his intention of becoming such citizen, being at least twenty-one years of age and of good moral character, may apply for examination or certificate of registration under this article, but before securing such certificate shall afford satisfactory evidence of having satisfactorily completed the course in an approved high school or the equivalent thereof, and subsequent thereto of having satisfactorily completed such courses in mathematics, history, and one modern language, as are included in the first two years in an approved institution conferring the degree of Bachelor of Arts. Such candidate shall in addition submit satisfactory evidence of at least five years' practical experience in the office or offices of a reputable architect or architects, commencing after the completion of the high-school course. The board of examiners may accept satisfactory diplomas or certificates from approved institutions covering the course required for examination. Upon complying with the above requirements the applicant shall satisfactorily pass an examination in such technical and professional courses as are established by the

board of examiners. The board of examiners, in lieu of all examinations, may accept satisfactory evidence of any one of the qualifications set forth under the following subdivisions 1 and 2:

1. A diploma of graduation or satisfactory certificate from a recognised architectural college or school, together with at least three years' practical experience in the office or offices of a reputable architect or architects; but the three years' experience shall be counted only as beginning at the completion of the course leading to the diploma or certificate.

2. Registration or certification as an architect in another State or country, where the standard of qualifications for the same are not lower than those required by the board of examiners under this article.

3. The board of examiners, in lieu of all examinations, shall accept satisfactory evidence as to the applicant's character, competency and qualifications, and that he has been continuously and exclusively engaged in the practice of architecture for more than two years next prior to the date when this article shall take effect; or satisfactory evidence that the applicant has been actually and exclusively engaged in the practice of architecture on his own account, or as a member of a reputable firm or association for more than one year prior to the date when this article shall take effect; providing the application for such certification shall be made within one year of such date.

Every person applying for examination or certificate of registration under this article shall pay a fee of twenty-five dollars to the Board of Regents.

Certificates.—The result of every examination or other evidence of qualification, as provided by this article, shall be reported to the Board of Regents by the board of examiners, and a record of the same shall be kept by the Board of Regents, and such board shall issue a certificate of registration to every person certified by the board of examiners as having passed such examination or as being otherwise qualified to be entitled to receive the same. Every person securing such certificates shall file the same with the county clerk of the county in which he resides or maintains a place of business. The Board of Regents may revoke any certificate, if such action be recommended by the board of examiners, after thirty days' written notice to the holder thereof and after a hearing before the board of examiners, upon proof that such certificate has been obtained by fraud or misrepresentation, or upon proof that the holder of such certificate has been guilty of felony in connection with his practice of architecture.

Any violation of this article shall be a misdemeanour, punishable for the first offence by a fine of not less than \$50 and not more than \$100, and for a subsequent offence by a fine of not less than \$200 nor more than \$500, or imprisonment for not more than one year, or both.

THE EXAMINATIONS.

Colonial: Final and Special.

The following gentlemen passed the Special Colonial and Final Examination held in Toronto in December 1912:—

BRAULT: Joseph Charles Gustave [*Special*], 6 Beaver Hall Square, Montreal.

DOGGART: Arthur Robert [*Special*], c/o Messrs. Ross & MacFarlane, Architects, Beaver Hall Hill, Montreal.

FOSTER: Francis Roland [*Prob.* 1893; *Student* 1898], 2081 Hutchison Street, Montreal.

TEMPLE: Eric Edward [*Prob.* 1901; *Student* 1907], 214 Wood Avenue, Westmount, Montreal.

TETLEY: Charles Reginald [*Special*], 745 St. Catherine Street W., Montreal.

CORRESPONDENCE.

Canterbury Cathedral.

Christchurch, New Zealand, 19th March 1913.

To the Editor, JOURNAL R.I.B.A.,—

SIR,—In the issue of 25th January you were good enough to publish a very lengthy analytical criticism of my Tourist Guide to Canterbury Cathedral. I regret that I was not allowed the pleasure of the acquaintance of my critic who stands behind the letters F.S.A., for I should like to thank him for the great trouble he has taken and his evident desire to free my Guide from omissions and what he regards as errors in order that I may "revise and republish" it. He is good enough to state that if it were "but a trifle more dependable it might be recommended even to the twentieth-century architect."

While thanking him for his evident good intentions and for calling my attention to a few interesting facts I had omitted to mention, I must, I regret to say, differ wholly from him as to the alterations he wishes me to make. I will only ask you to be good enough to grant me space to refer to those criticisms which question my statements of fact. It is these only which are of interest to fellow architects for whom the criticism was written, for in spite of my critic's opinion of my shortcomings, I trust that my readers will also be able to spend, as my critic says he has, "some pleasant hours in his (my) company among familiar scenes."

F.S.A. states:—"The writing of a concise and instructive handbook must be more difficult than it might seem, so little is the success generally achieved." The present instance makes it clear that the writing of an analytical criticism is also a task which presents many pitfalls.

I sincerely regret that F.S.A. should have stated that "it is a blemish on the book that mention of Willis's great work is relegated to a bibliography at the end of the volume," and that I have given but "scant acknowledgment" to Willis's work at Canterbury, for I give place to none in my admiration of his untiring energy and valuable researches. It is hard to realise how such a statement could be made when on page 116 of my Guide (under the heading "Bibliography" it is true) I describe the works which I state in the Preface, page iv, are "absolutely necessary for further study," and state "all the available books have been referred to by the author, and the information they contain, so far as it falls within the scope of the series, has been embodied in the explanations given." I refer (page 116) to "Britton's Antiquities" and say:—

"Those on Canterbury are constantly referred to by Professor Willis, the primary authority on the architectural analysis of the Cathedral and the Monastic Buildings. Professor Willis was the Jacksonian Professor of the

University of Cambridge, and after many years of labour he published in 1845 *The Architectural History of Canterbury Cathedral*, and in 1868 *The Conventual Buildings of the Monastery of Christ Church, Canterbury*. Both are well illustrated with plans, elevations, sections and sketches drawn by the author, and are extremely valuable. Unfortunately they are out of print. *The Conventual Buildings* can be seen in the Transactions for 1868 of the Kent Archaeological Society, before whom the paper was read in 1848. All subsequent writers have been indebted to Willis, and have quoted freely from his works. *The History of the Cathedral* contains translations of ancient writers on the subject, and both works show a vast amount of research in order to confirm or explain by documentary evidence the teachings of the buildings themselves."

In describing Dean Stanley's *Historical Memorials*, I say (page 117):—"All the ancient writers are referred to, and Willis is quoted as the architectural authority." Referring to the Guides published by Murray, I say (p. 118):—"Both Willis and Stanley are freely quoted," and to those published by Messrs. Bell & Sons (p. 118):—"Mr. Hartley Withers gives lengthy quotations from Willis and others." This in addition to writing on my plan of the Cathedral and the Monastic Buildings:—"Taken from Professor R. Willis's *Monastic Buildings*."

Is it therefore fair to make it appear that I had merely noted my indebtedness on the plan, and relegated Professor Willis's name to a list of books "at the end of the volume"? F.S.A. also complains that Eadmer and Gervase "do not even get a passing nod," and that "Sumner and Gostling are ignored," forgetting that Eadmer and Gervase wrote in Latin and that the whole of their works are translated and published by Willis in his *History of the Cathedral*, while Willis has also extracted and freely quotes all that is essential in Sumner and Gostling. In recommending therefore the tourist to read Willis and Stanley, I lead them to all that is valuable in the ancient writers.

Permit me now to quote extracts from my critic in which he takes exception not only to my statements, but also differs from the acknowledged authorities, and allow me to place next them quotations from my Guide and from the authorities.

The French and English William.

F.S.A.:—"And if French William is mentioned why not English William, his successor, whose output at Canterbury was really far more interesting than his master's. But English William is almost systematically ignored throughout, and his work sometimes unjustly given to his French predecessor."

Tourist Guide, page 53, referring to the undercroft under the Trinity Chapel:—"This part was designed by William of Sens in 1174, and completed by the English William in 1180."

Tourist Guide, page 56, referring to choir and Trinity Chapel:—"Although William of Sens only superintended the building for four years, from 1174 to 1178, the whole was carried out in accord-

ance with his design under the direction of one of his master masons, known as the English William."

Tourist Guide, page 76, referring to the Trinity Chapel and Corona:—"All this part was carried out by the English William, but the design of the whole scheme as well as the details, with the exception of the chevron and dog-tooth ornament seen on the arches, are thoroughly French, and follow here more closely than elsewhere the design of the Cathedral of Sens."

Authorities: Willis, *Cathedral*, page 91:—"It is a very difficult task to separate the original work of William the Englishman from that of his predecessor. Gervase, indeed, has told us pretty exactly all that was erected during his superintendence, but much of this must have formed part of the original design of William of Sens. The erection of the new Trinity Chapel, or Chapel of Becket, which took place wholly under the direction of the Englishman, must have been intended from the beginning."

Francis Bond, *English Cathedrals*, page 14:—"It is usual to attribute to the English William an important part in the design of the eastern chapels and crypt. The facts point the other way. Those eastern portions are less English and more French than the western work—everything was completed in strict conformity with the French design."

Conrad's Choir.

F.S.A.:—"On another interesting and debatable point, Mr. Seager is misleading because he jumps too readily at conclusions. He assumes that because Conrad's name is attached to his glorious choir, he was the actual architect or designer. He may have been, of course, but equally may the assumption be misleading."

Tourist Guide, Introduction, page xii:—"Archbishop Anselm, the eminent theologian and high-minded churchman who succeeded Lanfranc in 1093, pulled down Lanfranc's choir, and he commenced in 1096 the erection of the present choir, eastern transepts, and chapels. All this work was designed and carried out by Anselm's architect, Prior Ernulph, a pupil of Lanfranc's. It was afterwards decorated in such a marvellous manner by Ernulph's successor, Prior Conrad, that it was spoken of by writers of the time as 'Conrad's glorious Choir.'"

Authorities: Willis, *History of Cathedral*, pages 72 to 90, discusses in detail the work in the choir and attributes the whole of the eleventh-century work remaining to Ernulph, and speaks on page 75 of "Gervase's description of the 'Choir of Conrad.'" On page 17, translating from Eadmer, he says:—"This chancel, however, which Ernulph left unfinished, was superbly completed by his successor Conrad, who decorated it with excellent paintings."

Francis Bond:—"Conrad's Glorious Choir," was commenced by Prior Ernulph in 1096 and finished in 1115 by Prior Conrad."

*The Decorated Window in Anselm's Chapel and
Infirmary Chancel Windows.*

F.S.A.:—"Prior Oxyndenne's window in the Anselm Chapel is correctly dated 1336, but is ascribed to Prior d'Estria, who died in 1331. It is also set forth as one of the few pieces of decorated work the Cathedral has to show. What of the Chancel of the Infirmary Chapel, Hadebrand's (Hathbrand) work again, not Estria's, as stated."

Authorities:—I have carefully searched in Willis and other authorities for any mention of Prior Oxyndenne, but have been unable to find his name mentioned, except in *The Official Guide*. Willis's *History of Cathedral*, page 115, says:—"The decorated window of five lights (of Anselm's Chapel) is remarkable for its well-preserved history. Memorandum: that in the year 1336 there was made a new window in Christ Church, Canterbury, that is to say, in the Chapel of the Apostles SS. Peter and Paul (Anselm's Chapel), upon which there were expended the following sums, £42. 17s. 2d. The sum of £8. 13s. 4d. was given by certain friends for the said window, and the remainder of the money was furnished by the prior. This prior was Henry d'Estria, and the peculiar management of the heads of the lights with their pendant bosses may be compared with the similar bosses of his choir door." And in *A List of Dated Examples*, Willis gives: "Window of Anselm's Chapel by Prior de Estria, 1336."

I am quite aware that Willis, quoting from ancient authorities, gave the dates of d'Estria as 1285 to 1331, and I purposely refrained from mentioning this as there must evidently be some error in the date of his death, for surely Willis, such a careful authority, would not definitely state that the Prior who gave the remainder of the money required in 1336 for this window was Prior d'Estria. In reference to the Infirmary Chancel and its windows, I would note that the "Chancel" is part of the Monastic Buildings, not of the Cathedral, and that F.S.A. is in error in stating that it is Hathbrand's work—it is Norman with inserted decorated windows—for

Willis, in *Conventual Buildings*, page 53, states:—"But the fragments of the Norman zig-zag window of the S. and N., of a square Norman pilaster at the S.E. angle, and also of two Norman E. windows, show that this square chancel was built in the latter part of the Norman style."

Willis, on page 54:—"The Chancel of the Infirmary Chapel underwent a thorough restoration about the middle of the fourteenth century, of which no historical note remains. The pattern of the tracery of that (window) which remains has a mixture of geometrical and flowing lines that assimilates it to the window in Anselm's Chapel of which the recorded date is 1336."

The work which Hathbrand did is clearly stated and does not include the windows, for

Willis, *Conventual Buildings*, page 55, says:—

"The first recorded additions to the Infirmary are those of Prior Hathbrand, 1338–1370, who built the stone hall called 'Mensa Magistri Infirmatorii,' or Table Hall, as it was called at the Reformation, and also seven adjacent chambers for the infirm."

Meist Omers.

F.S.A.:—"Mr. Seager states as a fact that Meist Omers is derived from Omeaux, the elms which grew near it. This was a mere suggestion put forward by Professor Willis—for once missing a point—to explain a curious word. There was a treasurer Meister Omers who gave his name to his house."

F.S.A. gives no authority for his statement, but the *Official Guide*, by the Rev. T. Field and Rev. C. F. Routledge, states:—"Meist Omers probably from Magister Homer, an official of the monastery."

Meist Omers was not the name of a treasurer's house, but the name of the chief guest house among the group attached to the Priory. If there was an official entered on the records as Meister Omers or Magister Homer, is it not more probable that his title was derived from his duties as Master of the Elms, or Master in Charge, under the Prior, of the house named after the Elms? The title "Magister Infirmatorii" gives support to this contention. Until proof is given that Willis is wrong, I prefer to follow his well-reasoned explanations, too long to quote in full, but briefly:

Willis, *Conventual Buildings*, page 97:—"Part of the cemetery is well known to bear the name the 'Oaks,' the twelfth prebendary was granted a way through the 'gimews,' derived from Guimeauve marsh mallows. As two portions of land at east end take their names from trees and plants growing there, I venture to suggest Homers may be derived from corruption of 'Ormeaux,' elms—or 'Ormerie,' plantation of elms. The term 'Meistre' for 'Maitre' is preserved in the nautical phrase, *Arbre de Meistre*, mainmast."

Surely Willis and the previous students of the original documents, when seeking for an explanation, would have known of the official "Magister Homer," and would have accepted the solution suggested by F.S.A. had they thought it a correct one.

The Encasing of the Central and S.W. Towers.

My critic accuses me of inaccuracies, and gives as an instance:—

F.S.A.:—"We are told in almost consecutive sentences that Lanfranc's north-western tower had and had not been faced by perpendicular work at the time of its destruction, and that the Angel Steeple does and does not encase its predecessor," and so on.

In regard to the Angel Steeple this is quite unwarranted, for there is nothing to contradict

my statement, based on the researches of Mr. W. D. Caroe and referred to in my Guide, that,

Tourist Guide, page 8:—"The perpendicular work on the central tower encases—like the south-west tower—the original Norman tower built by Lanfranc."

In regard to the north-west tower the only justification for his assertion is a very manifest printer's error in printing the plural "towers," on page 6, in a paragraph dealing with the south-west or St. Dunstan's tower.

The Pulpitum or Choir Screen.

F.S.A.:—"More than once it is stated that there is no record of the great pulpitum, one of Chillenden's best recorded works."

Willis, *History of Cathedral*, page 97, says:—"This screen, elaborate and beautiful as it is, has no recorded date."

In Willis's *Conventual Buildings*, page 188, published after his *Cathedral*, there is an undated list of works executed by Prior Chillenden. These Willis numbered, and No. 1 is as follows:—"Navis ecclesie Cantuariensis cum apparatu, gradus et pulpiti ibidem cum stacione crucis, et nova capella beate Virginis in eadem navi."

But whether "gradus et pulpiti" refers to the great pulpitum or to pulpits in the body of the nave, I must leave others to determine. Francis Bond in *Screens and Galleries*, published in 1908, page 60, states the pulpitum to have been erected by Prior Chillenden in 1400, but he gives no authority for this exact date.

Tomb of Countess of Athol.

F.S.A. says:—"The erroneous designation of the tomb of Lady Tryvet as that of Countess of Athol is perpetuated," but he gives no authority to place against

Authorities:—The drawing by James Cole in the *History of Canterbury and York*, published by W. Sandby, 1755; *Murray's Guide*; *The Official Guide* (Rev. T. Field and Rev. C. F. Routledge); the Hon. and Rev. Canon Freemantle of English ministers, and all others I have been able to refer to.

My critic, as will be seen therefore, sets up many ninepins of his own to show how cleverly he can knock them down. They are not my ninepins, and what he regards as errors I have shown to be based on the recognised authorities. This method of criticism is most unjust. If F.S.A. wishes to dispute the recognised authorities, he should write a paper giving fully his authorities and his reasons. It is very probable that later researches would prove that Willis is not in every instance correct; but unsupported statements by one writing under a *nom-de-plume* cannot certainly be accepted as proof that subsequent writers who have followed him are at fault.

Yours faithfully,

S. HURST SEAGER [F.].

"Architects' Grievances" not alone British.

New York City, 26th April.

To the Editor, JOURNAL R.I.B.A.,—

DEAR SIR,—The other side of the question as set forth in the letter of a "Complainant in a Public Office," p. 312, merits consideration. After all, whether work is designed in a municipal office, or in that of a prominent outside architect, the bulk of it falls to an assistant, and *prima facie* there is no reason why one should not be as excellent or as indifferent as the other.

No doubt many good men have been glad in the present state of our overcrowded profession to take positions in municipal offices, although if governmental and municipal architecture is as poor as some allege, this can hardly be the case. I suppose it will be admitted that high-class men have held the position of heads of such departments. The practice that obtains of promoting men who have seen long service as underlings in Government departments is not, however, conducive to the production of high-class architecture, for the routine restrictions under which they have worked must prevent their being able to create a satisfactory monumental work.

The same grievance (in anticipation) is now exercising the minds of architects in the United States. There is now a Bill before the State Legislature for the appointment of a State Architect for five years, to have charge of all plans and specifications for all State buildings or institutions; all drawings for construction work to be under his direct supervision, and all alterations and improvements to be handled by his department, together with the letting of all contracts. At present the Secretary of the Treasury has power to hold competitions for designs and plans of new public buildings, and does so. This gives to outside architects a chance, and the result (apart from questions of taste) has been generally satisfactory, and on the whole has probably reduced "graft"—several notable instances notwithstanding. The first important building under the present *régime* was the New York Custom House by Mr. Cass Gilbert; the latest competition, just awarded to Mr. Lowell, is the Court House. The Bill referred to would revert to the old custom, and the plea is made on the ground of economy. Here at all events this is very problematical from the existence of political manoeuvring. In England, as I understand, it is alleged that departmental architecture is cheaper.

Outside men here allege with some truth that as the frequent changes of government mean change of architect employed by the State, there would be frequent changes of style according to the fancy of the men appointed. It is a moot point whether this is or is not an advantage to the progress of architecture as an art. It might or might not give us originality, but it is most likely to continue rigid classic types.

I deduce from Mr. C. Stanley Peach's letter (p. 254) that he classes all departmental architecture as "machine output," and all outside design as "mind work" of an "intellectual" kind, which strikes me as going too far. It must be admitted that the man who can sign his name to a great building is not always the one to whom most credit is due for its excellence, and he whom circumstances have obliged to be a mere employé will generally remain unknown to the public. It is true in this as in other branches of work, "the world knows little of its greatest workers," and the maxim "Palmarum qui meruit ferat" is rarely borne out in actual life. There are many names which should fairly be inscribed as co-workers upon our monuments for which we shall always look in vain while human nature remains as it is.

Faithfully yours,

EDWARD W. HUDSON [A.].

LEGAL.

Building Contract : Sub-Contractor : Right to Sue Builders.

RAMSDEN & CAIR F. CHESSUM & SONS & WARD.*

This case came before the Court of Appeal (Lords Justices Vaughan Williams, Buckley and Kennedy) on the 6th November 1912, on appeal by the defendants, Chessum & Sons, from a decision of Mr. Justice Hamilton, reported 76 J.P. 171. There was also a cross notice of appeal by the plaintiffs.

In October 1909 the defendant firm of J. Chessum & Sons contracted to erect a picture theatre, to be known as "Cinema House," in Oxford Street, for the London Cinematograph Company (1909) (Limited).

The contract between the parties was drawn in the form approved by the Royal Institute of British Architects. It was alleged that, under the contract, these defendants became bound to supply and fix the door handles and door furniture for the building.

The plaintiffs carried on business at South Kensington as designers and makers of door handles and door furniture. In March 1910 the defendant, Mr. Melville Seth Ward, who was the architect for the building owners, invited the plaintiffs to quote for and supply door handles and door furniture, and on 20th March 1910 he gave them particulars in writing of the door furniture required for the portion of Cinema House known as the theatre. Quotations having been given by the plaintiffs, they were accepted by the defendant Ward in April 1910. On 12th July 1910 the goods so ordered, to the value of £118, were duly delivered at the Cinema House. Various other goods were also supplied, to the total value of the amount claimed in the action. The plaintiffs, by their statement of claim, alleged that by a certificate in writing dated 16th September 1910, and signed by him, the defendant Ward certified for a sum of £1,500, which, it was alleged, included the price of the goods supplied by the plaintiffs at a total sum of £142 13s., and that the architect had acted, in effect, as the agent of the defendant firm. They accordingly sued for this sum as for the price of the goods sold and delivered, or, in the alternative, as for money had and received to their use, or held in trust for them. The defendant firm, by their defence, denied that it was their

duty to supply the door handles as alleged, and they further denied that the defendant Ward was their agent.

The only clause of the contract material for the purposes of the appeal was clause 20, which provided as follows:—

"All specialists, merchants, tradesmen, or others, executing any work or supplying any goods for which prime cost prices or provisional sums are included in the specification, who may at any time be nominated, selected, or approved by the architect, are hereby declared to be sub-contractors employed by the contractor, but no such sub-contractor shall be employed upon the works, against whom the contractor shall make what the architect considers reasonable objection, or who will not enter into a contract with the contractor upon terms and conditions consistent with those in this contract, and securing the due performance and maintenance of the work supplied or executed by such sub-contractor, and indemnifying the contractor against any claims arising out of the misuse by the sub-contractor or his workmen of any scaffold erected or plant employed, by the contractor, or that may be made against the contractor, in consequence of any act, omission, or default of the sub-contractor, his servants or agents."

The defendant Ward did not appear.

Mr. Justice HAMILTON held that the plaintiffs had failed to show that the architect had acted as agent for the builders; that the plaintiffs had no claim as for money had and received; but that, although at the time of receiving the order from the architect, and for some time thereafter, the plaintiffs were ignorant of the names of the builders, the fact that the goods were delivered to, and used by the defendant firm, raised an implied promise by them to pay for them.

The defendants, Chessum & Sons, appealed, and there was a cross appeal by the plaintiffs.

Mr. F. R. Y. Radcliffe, K.C., and Mr. G. A. Scott appeared for the defendants; and Mr. J. B. Eames for the plaintiffs.

The Court allowed the appeal (Lord Justice Kennedy dissenting) and dismissed the cross appeal.

Lord Justice VAUGHAN WILLIAMS, in delivering judgment, said that he agreed with Mr. Justice Hamilton insofar as he had dealt with the subsidiary questions that had been argued as to the money had and received, and as to the agency. He was not prepared to say that Ward had made the contract on behalf of the building owner. But, assuming that against the defendants, he must see whether under the circumstances of this case, the defendants had used the goods so as to imply a promise to pay for them.

In his judgment he ought not in this case to imply a promise. The architect had power to order goods outside the contract, and when the goods were delivered on the floor of the theatre, was there anything to tell the defendants that these goods had been ordered on their behalf, or that they must be treated as having been ordered on their behalf, so that they might use them or not, as they thought fit? He thought there was nothing by way of notice or otherwise, giving the defendants the information that these goods had been ordered on their behalf. For a long time there had been no intimation of the name of the plaintiffs or of the subject-matter of the goods, and there was nothing to show whether they were goods falling within the prices set out in the specification. It was said that it was the duty of the defendants to ask for the information when they saw the goods, and to avail themselves of the right to make sub-contracts. He (the Lord Justice) thought that it was the duty of the architect to give the name, the price of the goods, and the terms to the contractors.

There being, then, no contract for the supply of the goods, was there anything in the conduct of the defendants which threw the obligation to pay for the goods on them? It was said that they had used the goods with knowledge of the source from which they had come. So far as know-

* Reprinted by permission from the *Times Law Reports*, 22nd Nov. 1912.

ledge was concerned, he thought it was of the faintest description. Mr. Chessum had had the name of the sellers on 8th July, and had seen the goods on 12th July. Mr. Justice Hamilton had only drawn the inference that there had been an opportunity afforded to reject the goods. It was also said that user was sufficient to fix the defendants with liability, and cases had been cited to show that an implied promise was inferred only in special circumstances.

In his judgment that inference of an implied contract to pay ought not to be drawn here, and he was also in doubt if these goods were included in the certificates at all. He thought the appeal should be allowed, and, as to the cross appeal, he thought the judgment of Mr. Justice Hamilton was quite right.

Lord Justice BUCKLEY, in delivering judgment, said he had great hesitation in differing from Mr. Justice Hamilton. He agreed with him that Ward was not the defendants' agent. The architect was essentially in a position adverse to the builders; he was there to give orders to them. There was also no question of trust here. As to money had and received the defendants had not been paid, and, if they had, what they received was a lump sum; they had not been paid for specific items, and the payment had been made at a time when the amount of the plaintiffs' claim was unknown. He therefore thought that the cross appeal failed.

With regard to the appeal, it was familiar law that if goods were delivered to a person, and used by him so that he got the benefit, there was an implied promise to pay for them. But it was necessary that there should have been a delivery to that person, and a user by him of the goods for his benefit. The goods which had been delivered here were not such as were contemplated by the contract. Ward had ordered them, and they were delivered in July. The question then was, to whom had they been delivered? The goods were simply sent to a place, namely, the auditorium of the theatre. It had not been made out that there was any delivery to the defendants; and the invoice for them was sent to Ward. The defendants did not use the goods for the purposes of their contract, with a consequent liability to pay; neither had they the benefit in the sense of being paid for them. For all these reasons he thought that the appeal should be allowed.

Lord Justice KENNEDY said that he regretted that he could not agree with the judgments that had just been delivered. He thought it was well settled law that a person who received goods and used them, knowing who had supplied the goods, and also that the supplier was the seller and not the giver, must pay for the goods. This theatre was nearly completed at the beginning of June, but the door fittings had not been done as yet. There was a clear power in the contract to vary, and the goods ordered were contract work. The defendants knew that the goods were coming to them, and also knew the name of the plaintiffs.

The variation which had been made did not affect the liability. Delivery of the goods was made to the defendants, who were in sole possession of the building until October, and had the keys. The defendants had a further opportunity of objecting when the dog grate was delivered in October. He thought that the judgment of Mr. Justice Hamilton was quite right, and that the appeal should be dismissed. As to the cross appeal, he agreed with the other members of the court that it failed.

MINUTES. XIII.

ANNUAL GENERAL MEETING.

At the Seventy-ninth Annual General Meeting (being the Thirteenth General Meeting of the Session 1912-13), held Monday, 5th May 1913, at 8 p.m.—Present: Mr. George

Hubbard, F.S.A., *Vice-President*, in the Chair; 26 Fellows (including 7 members of the Council), 32 Associates (including 1 member of the Council), and 5 Licentiates—the Minutes of the Adjourned General Meeting (Ordinary) held 28th April were read and signed as correct.

The Chairman read a letter from the President expressing regret that unavoidable circumstances had compelled him to be absent from the Chair on the occasion of the Annual General Meeting.

Mr. C. Stanley Peach [F.], acting for the Hon. Secretary, announced the decease of Walter John Fletcher, County Architect and Surveyor of Dorset, till recently a member of the Institute, having been elected Associate in 1882 and Fellow in 1885; also of Edgar Osborne Banks, *Licentiate*.

Mr. Colin Hay Murray, *Associate*, attending for the first time since his election, was formally admitted by the Chairman.

The following candidates, being found eligible and qualified according to the Charter and By-laws, were nominated for election, viz.: As FELLOWS (15): William Edgar Gauld [A.] (Aberdeen), Alfred Harold Goslett [A.], Kenneth Guscotte Rea [A.] (Montreal), George Allen Ross [A.] (Montreal), William James Nash [A.] (Neath); and the following Licentiates who have passed the examination qualifying them for candidature: Leonard William Barnard (Cheltenham), Herbert Harold Brown (Manchester), Harry George Crothall, Clare Arnold Clayton Greene (Sunderland), William Hunt, J.P., L.C.C., Edward Arthur Hunt, William Louis Lucas, B.A. Cantab., Richard Barry Parker, J.P., David Salmond, Ernest George Theakston. As ASSOCIATES (10): Joseph Charles Gustave Brault (Montreal), George Arnold Cope, Herbert Reginald Cowley, P.A.S.I., Arthur Robert Doggart (Montreal), Francis Roland Foster (Montreal), William Wylie Houston (Belfast), Laurence Dunmore Martin, Charles Reginald Tetley (Montreal), Thomas Walker (Derby), Albert Wilby.

The Chairman having formally presented and moved the adoption of the Annual Report of the Council for the official year 1912-13, the motion was seconded by Mr. C. Stanley Peach. In the discussion which ensued, notice was given by Messrs. Edmund Wimperis [F.] and K. Gammell [A.] that they would bring before the next Business Meeting the question of the formation of a Professional Defence Fund for the purpose of protecting members when unjustly attacked.

The Report having been discussed, questions raised by Messrs. Edwin T. Hall [F.], H. Hardwicke Langston [A.], W. R. Davidge [A.], and Herbert Shepherd [A.] were replied to by the Chairman, Mr. Max Clarke (Chairman of the Finance Committee), Mr. Harold Saffery (Liquidator of the Architectural Union Company), Mr. Needham Wilson (for the Art Standing Committee), and the Secretary: whereupon, subject to slight verbal amendments accepted by the Chairman from Messrs. Langston and Shepherd, and to the inclusion in the Council's Report of a paragraph on a Standard Specification for Timber, and in the Practice Committee's Report of a paragraph on the Forestry Conference, it was

RESOLVED, with one dissentient, That the Annual Report of the Council for the official year 1912-13 be adopted.

A list of attendances at meetings of the Council and Standing Committees during the Session was presented and laid on the table.

On the motion of the President a vote of thanks was passed to Messrs. John Hudson [F.] and W. H. Burt [A.] for their services as Hon. Auditors, and the same gentlemen were nominated to serve in that capacity for the ensuing year.

The proceedings then closed and the Meeting separated at 10.35 p.m.



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MODERN ARCHITECTURE.

By THOMAS HASTINGS, Fellow of the American Institute of Architects (New York).

Read before the Royal Institute of British Architects, Monday, 26th May 1913.

WE American architects are oft-times confronted with the question as to why we have not an architecture of our own, one which is essentially American; and why it is that so many of us who have studied in Paris seem inclined to inculcate the principles of the *École des Beaux-Arts* into our American architecture. The majority of people do not seem to realise that in solving problems of modern life the essential is not so much to be National or American as it is to be modern and of our own period.

The question of supreme interest is: What influence life in its different phases has upon the development of architectural style. Style in architecture is that method of expression in the art which has varied in different periods, almost simultaneously throughout the civilised world, without reference to the different countries, beyond slight differences of national character mostly influenced by climate and temperament. Surely modern architecture should not be the deplorable creation of the would-be style-inventor, or that of the illogical architect living in one age and choosing a style from another.

The important and indisputable fact is not generally realised that from prehistoric times until now each age has built in one, and only one, style. Since the mound-builders and cave-dwellers, no people, until modern times, ever attempted to adapt a style of a past epoch to the solution of a modern problem; in such attempts is the root of all modern evils. In each successive style there has always been a distinctive spirit of contemporaneous life from which its root drew nourishment. But in our time, contrary to all historic precedents, there is a confusing selection from the past of every variety of style. Why should we not be modern and have one characteristic style expressing the spirit of our own life? History and the law of development alike demand that we build as we live.

One might consider the history and development of costumes to illustrate the principle involved. In our dress to-day we are modern but sufficiently related to the past, which we realise when we look upon the portraits of our ancestors of only a generation ago. We should

not think of dressing as they did, or of wearing a Gothic robe or a Roman toga ; but as individual as we might wish to be, we should still be inclined, with good taste, to dress according to the dictates of the day.

The irrational idiosyncrasy of modern times is the assumption that each kind of problem demands a particular style of architecture. Through prejudice, this assumption has become so fixed that it is common to assume that, if building a church or a university, we must make it Gothic ; if a theatre, we must make it Renaissance. One man wants an Elizabethan house ; another wants his house Early Italian. With this state of things it would seem as though the serious study of character were no longer necessary. Expression in architecture, forsooth, is only a question of selecting the right style. The two parties with which we must contend are, on the one hand, those who would break with the past, and, on the other, those who would select from the past according to their own fancy.

Style in its growth has always been governed by the universal and eternal law of development. If from the early times, when painting, sculpture, and architecture were closely combined, we trace their progress through their gradual development and consequent differentiation, we cannot fail to be impressed by the way in which one style has been evolved from another. This evolution has always kept pace with the progress of the political, religious, and economic spirit of each successive age. It has manifested itself unconsciously in the architect's designs, under the imperatives of new practical problems and of new requirements and conditions imposed upon him. This continuity in the history of architecture is universal. As in nature the types and species of life have kept pace with the successive modifications of lands and seas and other physical conditions imposed upon them, so has architectural style in its growth and development *until now* kept pace with the successive modifications of civilisation. For the principles of development should be as dominant in art as they are in nature. The laws of natural selection and of the survival of the fittest have shaped the history of architectural style just as truly as they have the different successive forms of life. Hence, the necessity that we keep and cultivate the historic spirit, and that we respect our historic position and relations, and that we more and more realise in our designs the fresh demands of our time, more important even than the demands of our environment.

What determining change have we had in the spirit and methods of life since the revival of learning and the Reformation to justify us in abandoning the Renaissance or in reviving Mediæval art, Romanesque, Gothic, Byzantine, or any other style ? Only the most radical changes in the history of civilisation, such as, for example, the dawn of the Christian era and of the Reformation, and the revival of learning, have brought with them correspondingly radical changes in architectural style.

Were it necessary, we could trace two distinctly parallel lines, one the history of civilisation and the other the history of style in art. In each case we should find a gradual development, a quick succession of events, a revival, perhaps almost a revolution and a consequent reaction, always together like cause and effect, showing that architecture and life must correspond. In order to build a living architecture we must build as we live. Compare the Roman orders with the Greek and with previous work. When Rome was at its zenith in civilisation, the life of the people demanded of the architect that he should not only build temples, theatres, and tombs, but baths, palaces, basilicas, triumphal arches, commemorative pillars, aqueducts, and bridges. As each of these new problems came to the architect, it was simply a new demand from the new life of the people : a new work to be done. When the Roman architect was given such varied work to do, there was no reason for his casting aside all precedent. While original in conception, he was called upon to meet these exigencies only with modifications of the old forms. These modifications very gradually gave us Roman architecture. The Roman orders

distinctly show themselves to be a growth from the Greek orders, but the variations were such as were necessary in order that the orders might be used with more freedom in a wider range of problems. These orders were to be brought in contact with wall or arch, or to be superimposed upon one another, as in a Roman amphitheatre. The Roman recognition of the arch as a rational and beautiful form of construction, and the necessity for the more intricate and elaborate floor plan, were among the causes which developed the style of the Greeks into what is now recognised as Roman architecture.

We could multiply illustrations without limit. The battlements and machicolated cornices of the Romanesque; the thick walls and the small windows placed high above the floor, tell us of an age when every man's house was indeed his castle, his fortress, and his stronghold. The style was then an expression of that feverish and morbid aspiration peculiar to mediæval life. The results are great, but they are the outcome of a disordered social status not like our own; and such a status could in no wise be satisfied with the simple classic forms of modern times, the architrave and the column.

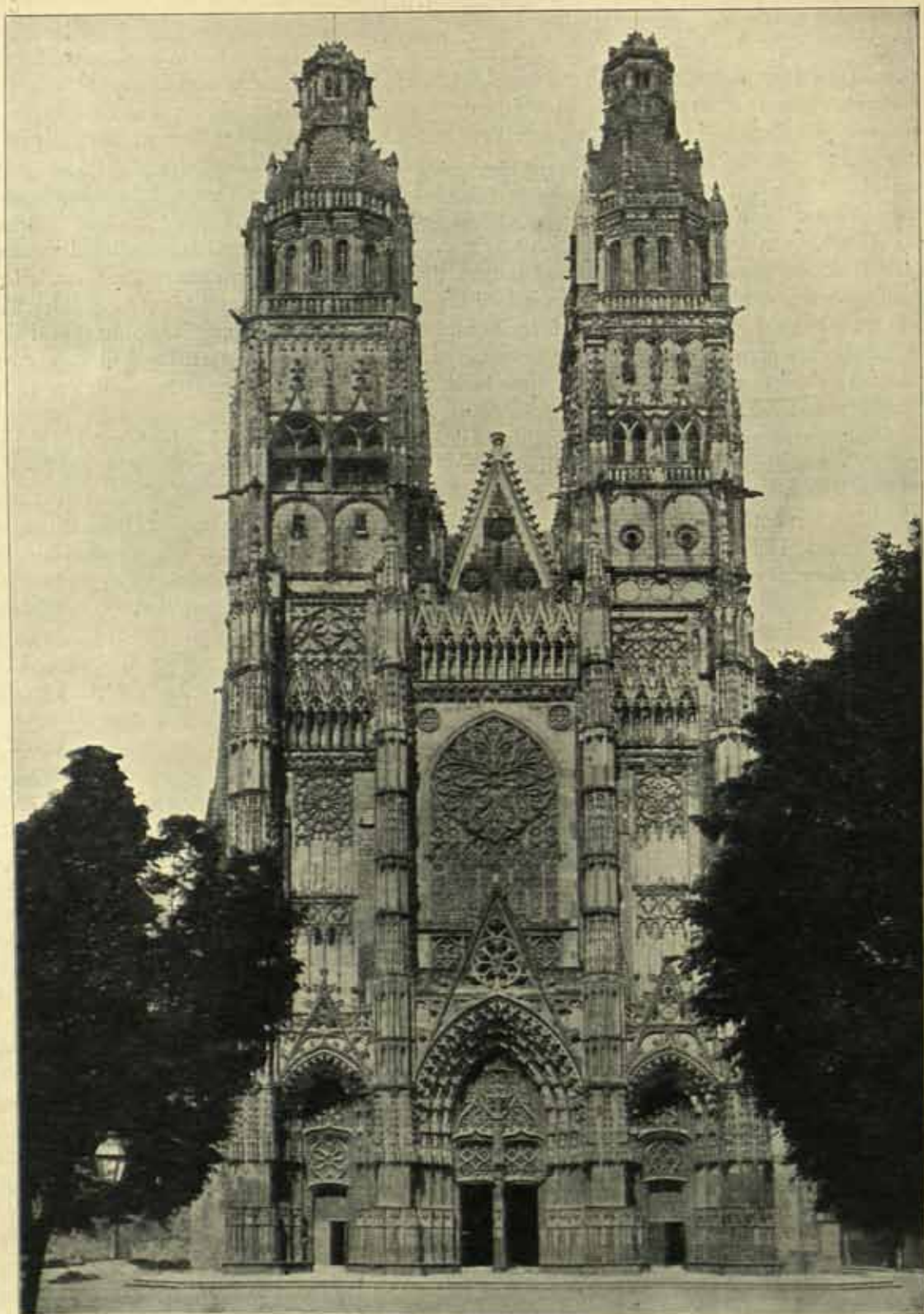
Compare a workman of to-day building a Gothic church, slavishly following his detail drawings, with a workman of the fourteenth century doing such detail work as was directed by the architect, but with as much interest, freedom, and devotion in making a small capital as the architect had in the entire structure. Perhaps doing penance for his sins, he praises God with every chisel-stroke. His life interest is in that small capital; for him work is worship and his life is one continuous psalm of praise. The details of the capital, while beautiful, may be grotesque; but there is honest life in them. To imitate such a capital to-day, without that life, would be affectation. Now a Gothic church is built by labourers whose one interest is to increase their wages and diminish their working hours. The best Gothic work has been done, and cannot be repeated. When attempted, it will always lack that kind of mediæval spirit of devotion which is the life of mediæval architecture.

We might enumerate such illustrations indefinitely.

If one age looks at things differently from another age, it must express things differently. We are still living to-day in the period of the Renaissance. With the revival of learning, with the new conceptions of philosophy and religion, with the great discoveries and inventions, with the altered political systems, with the fall of the Eastern Empire, with the birth of modern science and literature, and with other manifold changes all over Europe, came the dawn of the modern world; and with this modern world there was evolved what we should now recognise as the modern architecture, the Renaissance which pervaded all the arts and which has since engrossed the thought and labour of the first masters in art. This Renaissance is a distinctive style in itself, which, with natural variations of character, has been evolving for almost four hundred years.

So great were the changes in thought and life during the Renaissance period that the forms of architecture which had prevailed for a thousand years were inadequate to the needs of the new civilisation: to its demands for greater refinement of thought, for larger truthfulness to nature, for less mystery in form of expression, and for greater convenience in practical living. Out of these necessities of the times the Renaissance style was evolved—taking about three generations to make the transition—and around no other style have been accumulated such vast stores of knowledge under the lead of the great masters of Europe. Therefore whatever we now build, whether church or dwelling, the law of historic development requires that it be Renaissance; and if we encourage the true principles of composition it will involuntarily be a modern Renaissance; and with a view to continuity we should take the eighteenth century as our starting point, because here practically ended the historic progression and entered the modern confusion.

Imagine the anachronism of trying to satisfy our comparatively realistic tastes with Gothic



THE CATHEDRAL, TOURS.



PARISH CHURCH, GISORS.

architectural sculpture or with painting made by modern artists! Never until the present generation have architects presumed to choose from the past any style in the hope to do as well as was done in the time to which that style belonged. In other times they would not even restore or add to an historic building in the style in which it was first conceived. It is interesting to notice how the architect was even able to complete a tower or add an arcade or extend a building following the general lines of the original composition without following its style, so that almost every historic building within its own walls tells the story of its long life. How much more interesting alike to the historian and the artist are these results!

In every case where the mediæval style has been attempted in modern times the result has shown a want of life and spirit, simply because it was an anachronism. The result has always been dull, lifeless, and uninteresting. It is without sympathy with the present or a germ of hope for the future—only the skeleton of what once was. We should study and develop the Renaissance and adapt it to our modern conditions and wants so that future generations can see that it has truly interpreted our life. We can interest those who come after us only as we thus accept our true historic position and develop what has come to us. We must accept and respect the traditions of our fathers and grandfathers and be, as it were, apprenticed by their influence. Without this we shall be only copyists, or be making poor adaptations of what was never really ours.

The time must come, and I believe in the near future, when architects of necessity will be educated in one style, and that will be the style of their own time. They will be so familiar with what will have become a settled conviction, and so loyal to it, that the entire question of style, which at present seems to be determined by fashion, fancy, or ignorance, will be kept subservient to the great principles of composition, which are now more or less smothered in the general confusion.

Whoever demands of an architect a style not in keeping with the spirit of his time is responsible for retarding the normal progress of the art. We must have a language if we would talk. If there be no common language for a people there can be no communication of ideas either architectural or literary. I am convinced that the multiplicity of printed books and periodicals written by literary critics and essayists who have not even been apprenticed, but are writing with authority about art, has, perhaps, been more instrumental than anything else in bringing about this modern confusion. I believe that we shall one day rejoice in the dawn of a modern Renaissance, and, as always has been the case, we shall be guided by the fundamental principles of the classic. It will be a modern Renaissance, because it will be characterised by the conditions of modern life. It will be the work of the Renaissance architect solving new problems, adapting his art to an honest and natural treatment of new materials and conditions. Will he not also be unconsciously influenced by the twentieth-century spirit of economy, and by the application of his art to all modern industries and speculations?

Only when we come to recognise our true historic position and the principles of continuity in history—when we allow the spirit of our life to be the spirit of our style, recognising first of all that form and all design are the natural and legitimate outcome of the nature or purpose of the object to be made—only then can we hope to find a real style everywhere asserting itself. Then we shall see that consistency of style which has existed in all times until the present generation; then shall we find it in every performance of man's ingenuity: in the work of the artist or the artisan, from the smallest and most insignificant jewel or book-cover to the noblest monument of human invention or creation; from the most ordinary kitchen utensil to the richest and most costly furniture or decoration that adorns our dwelling.

We must all work and wait patiently for the day to come when we shall work in unison with our time. Our Renaissance must not be merely archaeological, the literal following of

certain periods of the style. To build a French Louis XII. or Francis I. or Louis XIV. house, or to make an Italian cinquecento design, is indisputably not modern architecture. No architect until our times slavishly followed the characteristics of any particular period; but he used all that he could get from what preceded him, solving such new problems as were the imperatives of his position.

What did a man like Pierre Lescot, the architect of the Henry II. Court of the Louvre, endeavour to do? It would have been impossible for him actually to define the style of his own period. That is for us, his successors, to do. For him the question was how to meet the new demands of contemporaneous life. He studied all that he could find in Classic and Renaissance precedents applicable to his problem. He composed, never copying, and always with that artistic sense and the sense of the fitness of things which were capable of realising what would be harmonious in his work. In the same way all architects, at all times, contributed to a contemporaneous architecture, invariably with modifications to meet new conditions. This must be done with a scholarly appreciation of that harmonious result which comes only from a thorough education. So, with freedom of the imagination and unity of design, an architecture is secured expressive of its time.

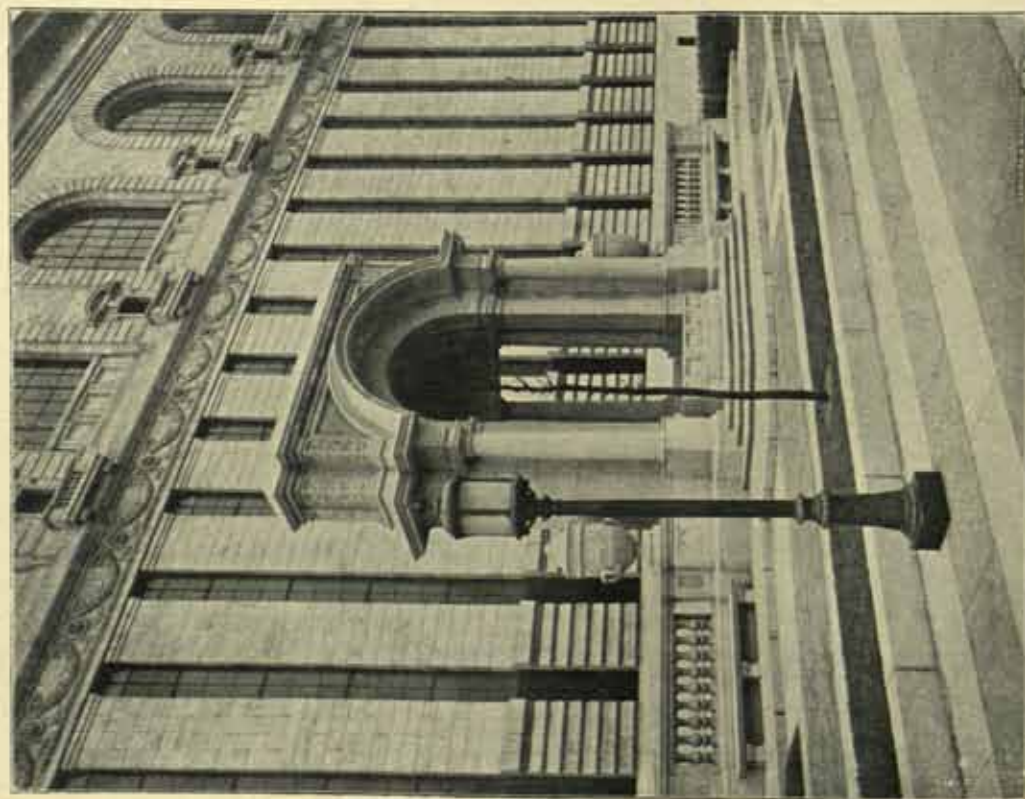
How is it with us in modern times? Not only do many architects slavishly follow the character of some selected period, but they also deliberately take entire motives of composition from other times and other places to patch and apply them to our new conditions and new life. Every man's conscience must speak for itself as to whether such plagiarism is right; but while the moral aspect of this question has very little to do with art, yet intellectually such imitative work, though seemingly successful, positively stifles originality, imagination, and every effort to advance in the right direction.

The way is now prepared for us to endeavour to indicate what are some of the principal causes of the modern confusion in style. With us Americans, an excessive anxiety to be original is one of the causes of no end of evil. The imagination should be kept under control by given principles. We must have ability to discern what is good among our own creations, and courage to reject what is bad. Originality is a spontaneous effort to do work in the simplest and most natural way. The conditions are never twice alike; each case is new. We must begin our study with the floor-plan, and then interpret that floor-plan in the elevation, using forms, details, and sometimes motives, with natural variations and improvements on what has gone before. The true artist leaves his temperament and individuality to take care of themselves.

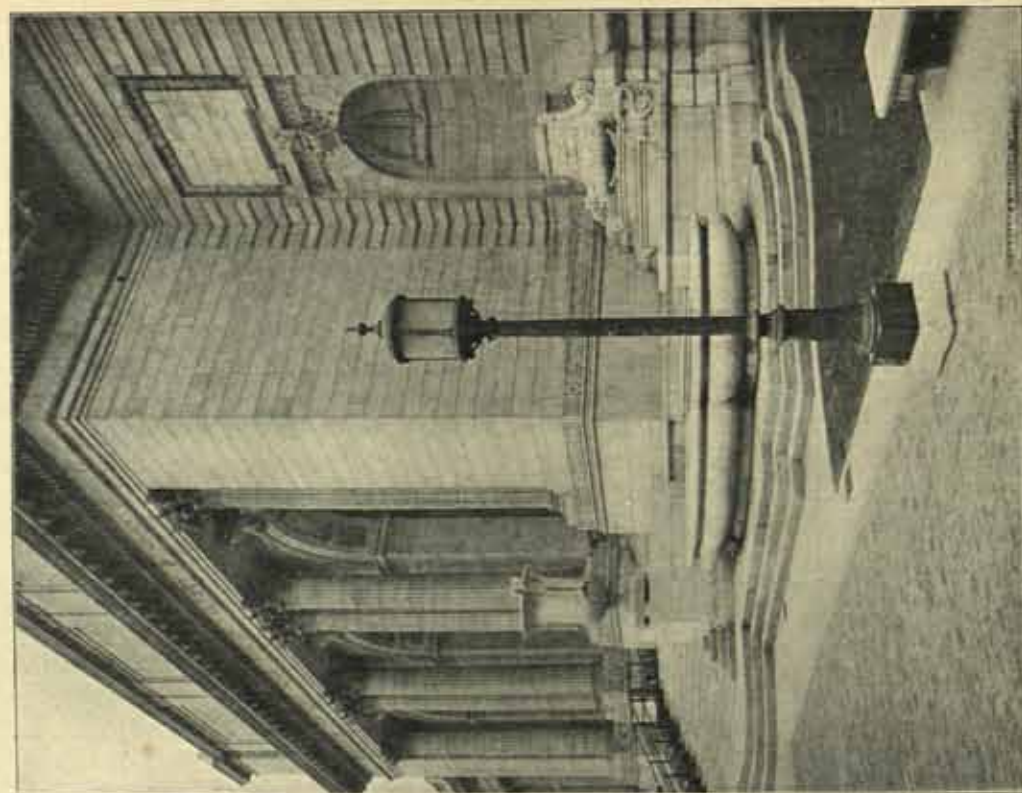
Some say that if this is all that we are doing, there is nothing new in art; but if we compose in the right way, there can be nothing that is not new. Surely you would not condemn nature for not being original because there is a certain similarity between the claw of a bird and the foot of a dog, or between the wing of a bird and the fin of a fish. The ensemble of each creature is the natural result of successive stages of life, with variations of the different parts according to the principles of evolution. There are countless structural correspondencies in the skeletons of organic life, but these show the wonderful unity of the universe; and yet, notwithstanding this unity, nature is flooded with an infinite variety of forms and species of life.

We must logically interpret the practical conditions before us, no matter what they are. No work to be done is ever so arbitrary in its practical demands but that the art is elastic and broad enough to give these demands thorough satisfaction in more than a score of different ways. If only the artist will accept such practical imperatives as are reasonable, if only he will welcome them, one and all, as friendly opportunities for loyal and honest expression in his architecture, he will find that these very conditions will do more than all else besides for his real progress and for the development of contemporaneous art in composition.

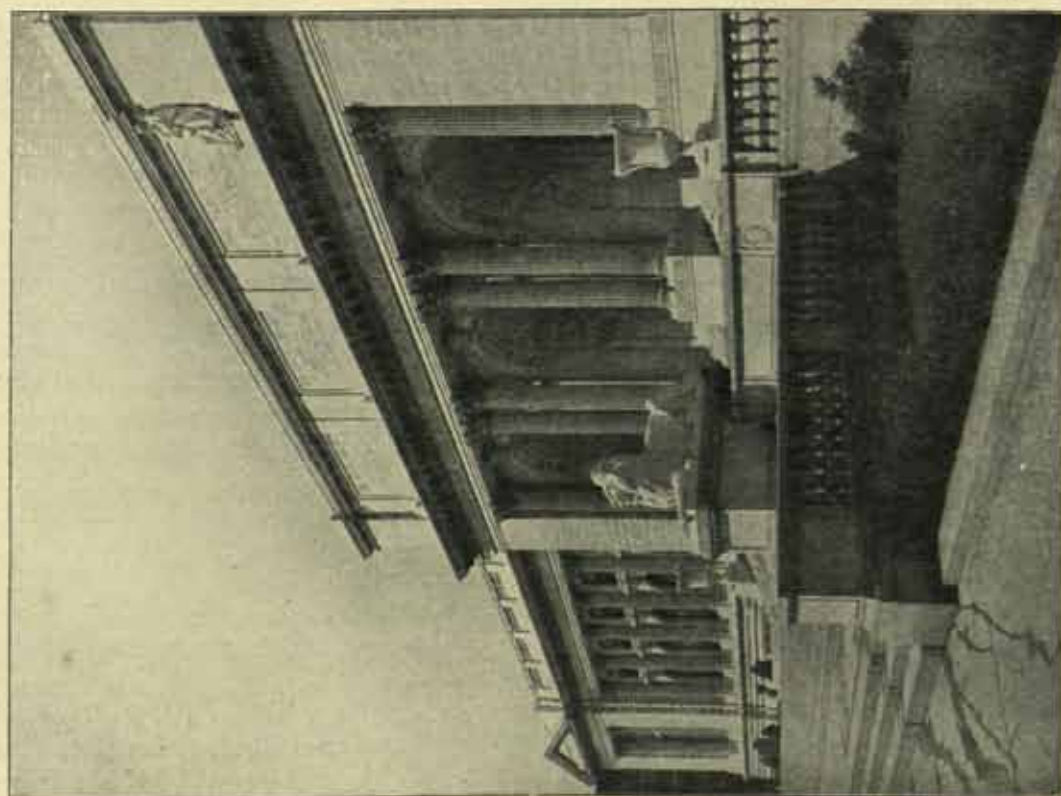
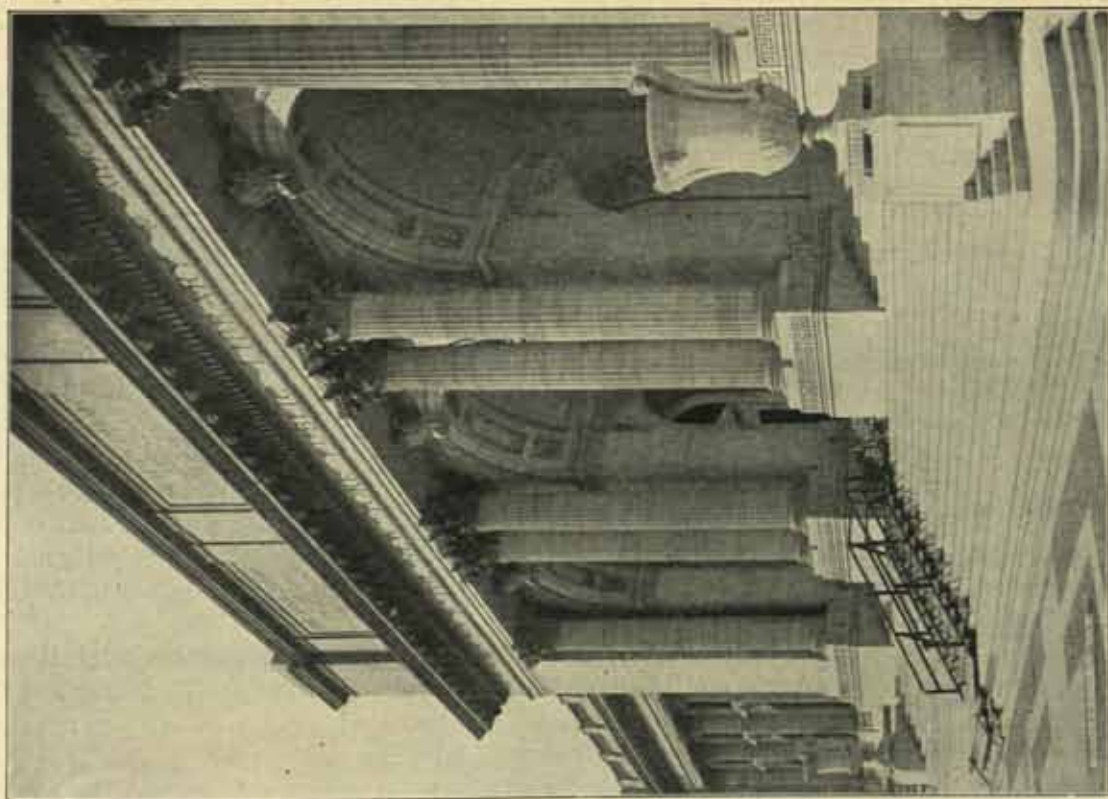
The architects in the early history of America were distinctly modern and closely related in



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CARRERE & HASTINGS, ARCHITECTS.



NEW YORK PUBLIC LIBRARY. Carrere & Hastings, architects

their work to their contemporaries in Europe. They seem not only to have inherited traditions, but to have religiously adhered to them. I believe that it is because of this that the genuine and naïve character of their work, which was of its period, still has a charm for us which cannot be imitated. McComb, Bulfinch, Thornton, Latrobe, L'Enfant, Andrew Hamilton, Strickland, and Walters were sufficiently American and distinctly modern, working in the right direction, unquestionably influenced by the English architecture of Inigo Jones, Sir Christopher Wren, James Gibbs, Sir William Chambers. Upjohn and Renwick, men of talent, were misled, alas! by the confusion of their times, the beginning of this modern chaos, the so-called Victorian-Gothic period.

Gifted as Richardson was, and great as his personality was, his work is always easily distinguished, because of its excellent quality, from the so-called Romanesque of his followers. But I fear the good he did was largely undone because of the bad influence of his work upon his profession. Stumpy columns, squat arches, and rounded corners, without Richardson, form a disease from which we in America are only just recovering. McComb and Bulfinch would probably have frowned upon Hunt for attempting to graft the transitional Loire architecture of the fifteenth century upon American soil, and I believe all will agree that the principal good he accomplished was due to the great distinction of his art, and to the moral character of the man himself, rather than to the general influence and direction of his work.

Whether we agree with Charles F. McKim, or not, in wanting to revive in the nineteenth century the art of Bramante, San Gallo, and Peruzzi, he had perhaps more of the true sense of beauty than any of his predecessors in American art. His work was always refined, personal, and with a distinctly more classic tendency in his most recent buildings.

We have seen that the life of an epoch makes its impress upon its architecture. It is equally true that the architecture of a people helps to form and model its character. In this way it reacts upon it. If there is beauty in the plans of our cities, and in the buildings which form our public squares and highways, its good influence will make itself felt upon every passer-by. Beauty in our buildings is an open book of involuntary education and refinement, and it uplifts and ennobs human character: it is a song and a sermon without words. It inculcates in a people a true sense of dignity, a sense of reverence and respect for tradition, and it makes an atmosphere in its environment which breeds the proper kind of contentment, that kind of contentment which stimulates ambition. If we would be modern, we must realise that beauty of design and line in construction builds well, and with greater economy and endurance, than construction which is mere engineering. The qualitative side of construction should first be considered, then the quantitative side. The practical and the artistic are inseparable. There is beauty in nature because all nature is a practical problem well solved. The truly educated architect will never sacrifice the practical side of his problem. The great economic as well as architectural calamities have been performed by so-called practical-men with an experience mostly bad and with no education.

It is, I believe, a law of the universe that the forms of life which are fittest to survive—nay, the very universe itself—are beautiful in form and colour. Natural selection is beautifully expressed, ugliness and deformity are synonymous; and so in the economy of life what would survive must be beautifully expressed.

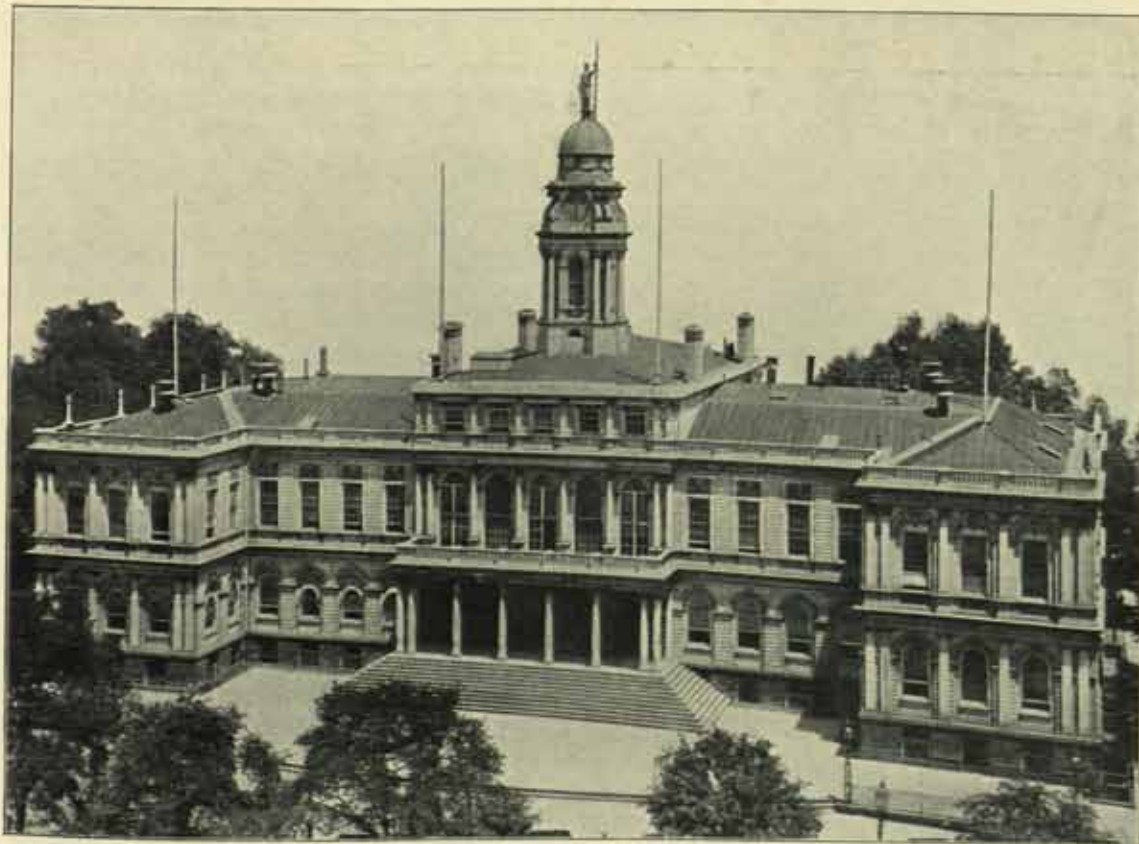
When we think of what the past ages have done for us, should we not be more considerate of those that are yet to come? A great tide of historic information has constantly flowed through the channel of monuments erected by successive civilisations, each age expressing its own life, and we can almost live in the past through its monuments.

The recently discovered buried cities of Assyria give us a vivid idea of a civilisation lost to history. The Pyramid of Cheops and the Temples of Karnak and Luxor tell us more of that ingenuity which we cannot fathom, and the grandeur of the life and history of the Egyptian people,

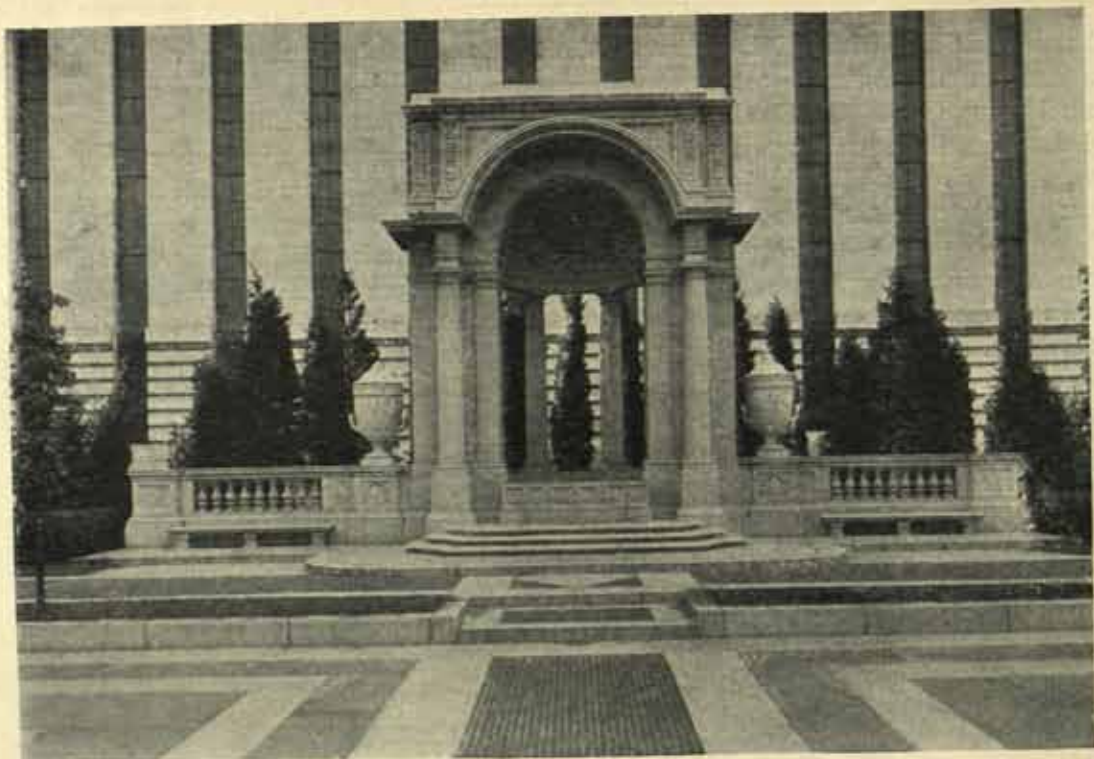
than the scattered and withered documents or fragments of inscriptions that have chanced to survive the crumbling influences of time. The Parthenon and the Erechtheum bespeak the intellectual refinement of the Greeks as much as their epic poems or their philosophy. The triumphal arches, the aqueducts, the Pantheon, and the basilicas of Rome tell us more of the great constructive genius of the early republic and the empire of the Cæsars than the fragmentary and contradictory annals of wars and political intrigues.

The unsurpassed and inspiring beauty of the Gothic cathedrals which bewilder us, and the cloisters which enchant us, impress on our minds a living picture of the feverish and morbid aspirations of mediæval times—a civilisation that must have mingled with its mysticism an intellectual and spiritual grandeur which the so-called Dark Ages of the historian have failed adequately to record; and in America, even amid the all-absorbing work of constructing a new government, our people found time to speak to us to-day in the silent language of their simple colonial architecture of the temperament and character of our forefathers.

Will our monuments of to-day adequately record the splendid achievements of our contemporaneous life—the spirit of modern justice and liberty, the progress of modern science, the genius of modern invention and discovery, the elevated character of our institutions? Will disorder and confusion in our modern architecture express the intelligence of this twentieth century? Would that we might learn a lesson from the past—that modern architecture, wherever undertaken, might more worthily tell the story of the dignity of this great epoch and be more expressive of this wonderful contemporaneous life.



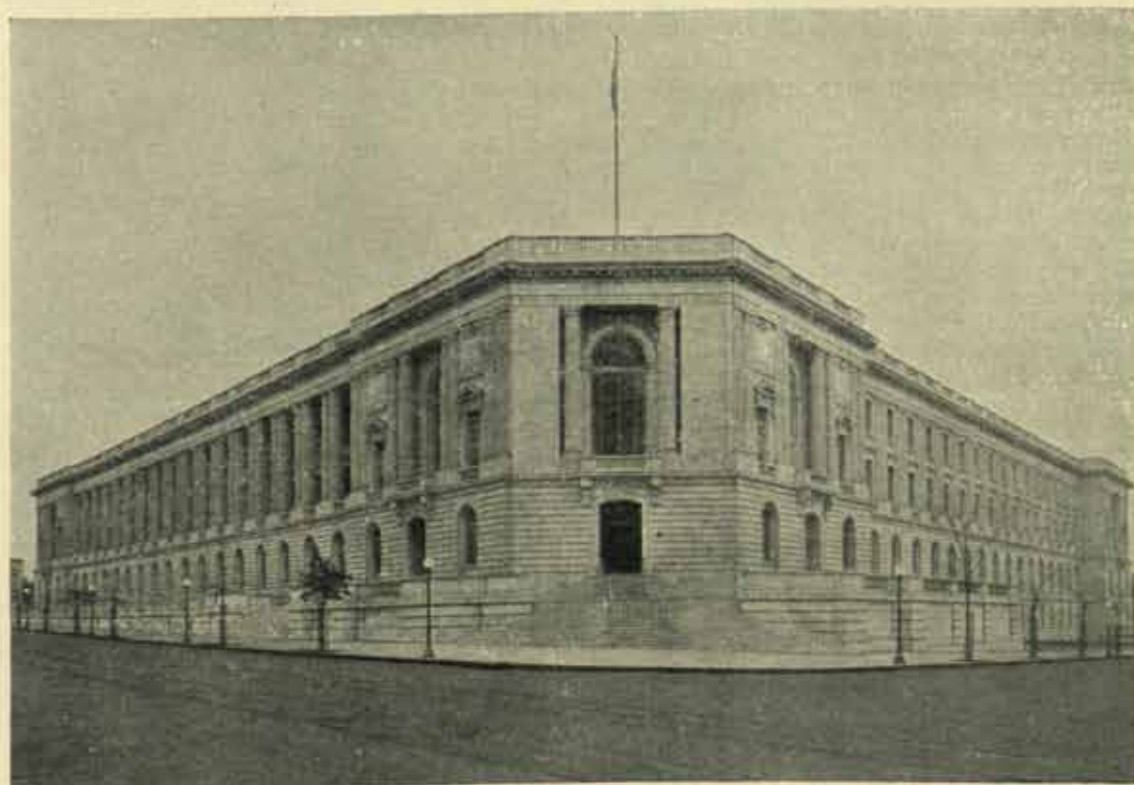
CITY HALL, NEW YORK CITY. John McComb, architect.



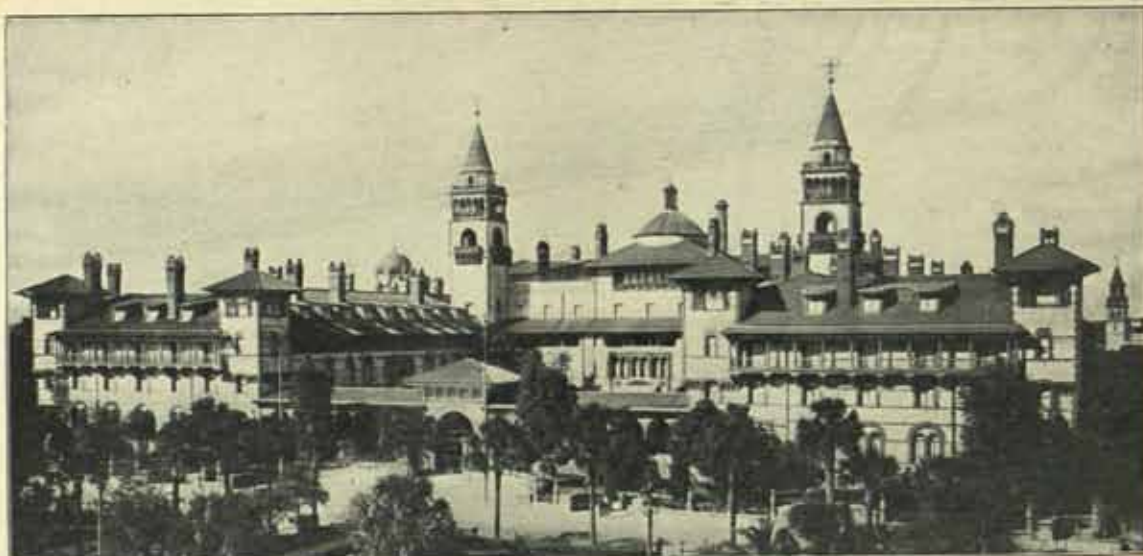
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OFFICE BUILDING FOR UNITED STATES SENATE, WASHINGTON
Carrero & Hastings, architects



PONCE DE LEON HOTEL, ST. AUGUSTINE, FLORIDA. Carrere & Hastings, architects.

DISCUSSION.

The President, Mr. REGINALD BLOMFIELD, A.R.A., in the Chair.

SIR ASTON WEBB, C.B., C.V.O., R.A., rising at the instance of the President, said: I consider it a great honour, Mr. President, that you should ask me to propose a vote of thanks to Mr. Hastings for the Paper he has given us, and I do so with the greatest heartiness. We have to thank him not only for his Paper, but for crossing the Atlantic and reading it in person to us this evening. Mr. Hastings is accompanied by Mrs. Hastings, and perhaps we may be allowed to extend to them both a hearty welcome and to express the hope that they will enjoy their stay with us. They have brought with them weather very similar, I believe, to that which is enjoyed in New York at this time of the year, and therefore they will feel, I hope, the more at home. Then, Sir, I am sure that we must thank Mr. Hastings for the subject on which he has chosen to address us. What more interesting subject could be brought before architects than the story of a nation seeking for a style of architectural expression—but which, as we hear from Mr. Hastings, has not yet entirely been found. That must appeal especially to us English, for we have been at this job for a hundred years or more, and are still in the same dilemma, although we have not given up hope. We may well believe with Mr. Hastings, however, that in time the American people will find what they seek. We shall all agree that a modern building ought to be modern. This would seem hardly to want stating, and yet, unfortunately, we must again agree with Mr. Hastings that a large number of modern buildings are not modern in the sense he means. The French architects seem to have secured a modern archi-

tecture, but I always think of a distinguished Frenchman who once remarked to me, "You English are still copying the ancient styles; you are not modern." That was rather a severe criticism, and it was the more severe because I felt it to be near the truth. Then the question arises as to how we are to acquire an expression which will be modern. Last year we had the pleasure of receiving Mr. Cram, who came from America to read us a most interesting Paper on University Architecture in his country, and from him I gathered that he thought salvation was to be found in the Gothic. To-night I gather from Mr. Hastings that he looks upon that as being only the very reverse. He looks to something quite different. I am not here to say which is right, but only to point out how interesting it is to hear these different views. Mr. Hastings thinks we should look to the Renaissance, and he rather suggested that Inigo Jones and Christopher Wren are well worth our consideration. We have tried both; we have tried the Gothic and Wren—and Wren is a very difficult man to follow—but at present we cannot say that we have exactly found our feet and are progressing towards a fresh and modern expression. Mr. Hastings has traced for us the development of styles from the very beginning. We have done it ourselves—perhaps not so eloquently as he has, but we have done it—and we come to a time when we can get no further, and go back; and in just the same way, if Mr. Hastings will allow me to say so, America has had to try back. Can, then, nothing be done? We all agree that imitation of old buildings will not

do; we have done that, and so have they in America. And what is the good? We are asked to build perhaps an Elizabethan house. I consider it an insult to be asked to build an Elizabethan house, or a fifteenth-century house, or a Queen Anne house in the twentieth century. Fancy asking a painter to paint a Botticelli! Still, we resent the insult, but build the house afterwards! But if we do that, and if we think, as I am afraid we are often rather apt to think, that because a thing is old it is therefore beautiful, and because a thing is new it is therefore bad, can we wonder at our clients feeling the same? And so we have our houses filled with imitation old panelling, imitation Old Masters, imitation old furniture, until we hardly care to look inside the house again. And this happens in America as it happens over here. I should like to see Old Masters safe in museums, never to come out again. In such a depository they could be objects of study and of admiration. In the house itself progress will never be made so long as we are not allowed to rely upon our own imagination, taste, and invention to make it essentially fit for the purpose for which it is built. Mr. Hastings has mentioned three American architects who greatly influenced architectural development in their own country, namely, Hunt, Richardson, and McKim. The first two of these sowed a seed which came up and flourished where, I suppose, it had no deepness of earth, and when the sowers died it withered away. McKim followed with a later style, and with, perhaps, as Mr. Hastings says, a greater sense of beauty. He followed in a Renaissance manner, and no one yet can tell how far the influence of that beautiful work of his will remain. If I may venture an expression of opinion, I think it is likely to have—and indeed has had already—the most beneficial influence on American architecture that has ever been felt. When in America nothing struck me so much as the extraordinary admiration and affection that all the profession there expressed for McKim, and I could not help thinking what a support this must have been through all the storm and stress of the life which so gentle a man as McKim was called upon to live. I should like to mention three architects over here who, I think, like the others in America, have influenced greatly our architecture, and who have possessed great individuality. They are Sir Charles Barry, G. F. Bodley, and Norman Shaw. There were many others, of course, but those were three men who worked in certain styles and yet put a tremendous amount of individuality into the work they undertook. The Reform Club in Pall Mall, for instance, is said to be a copy of the Farnese Palace, but if it is compared with that building its originality becomes evident. You can see Barry in the general composition and fenestration, in every moulding of the cornice, in every architrave, and in every

string. It is the same with Bodley. His work was supposed to have been in the style of the fifteenth century, but it would never have been mistaken for fifteenth-century work. You can see Bodley in every portion of his building, and the same with Shaw. Regretfully we must admit that these great men, although they have left followers, have not left a school, nor a tradition which will go through the ages and start us on that expression to which Mr. Hastings has called our attention. If architectural imitation will not do any good, if archaeological study will not, what will? Mr. Hastings suggested that education might do good, and there I am entirely with him, and this Institute puts all its endeavours into education on lines very much the same as those he indicated. We endeavour to get young men to work on similar lines, and to work together on one plane, even though later on, when they come to design buildings of their own, they will, as we hope, introduce their own individuality, which does not seem so necessary while they are learning the first principles of architecture. There is another point to which I should like to allude, viz., that we should take more interest in modern work. We are a little prone, I think, not to take as much interest in modern work as we might, and as I think we ought to do. My illustration is a homely one, but it may suffice: if you arrived at a railway station with half an hour to wait, and were told by the porter—which is very unlikely—that there was a very fine old church on one side of the line, and a very fine new church on the other, and that there was time to visit one but not time to visit both, which would you go and see? Nine out of ten people in the present day would go and see the old church, and leave the new one alone. But I do not think there is very much chance of architecture moving along on really homogeneous lines until that proportion is reversed, and nine go and see the new church and one the old. But we must not let this evening pass without expressing our great admiration for what has been done in America in the way of architectural achievement during the last twenty or twenty-five years. There was a time when architectural art in America was almost a negligible quantity. Now, as we know, we are all eager to see the work of the best men over there, and we gladly acknowledge that we consider it on an equality to what is going on in this old country of ours. They have their own problems to solve; we know that one cannot turn the wheel with the water that is past; it is no good trying to work out new problems on old lines. Mr. Hastings has, I think, perhaps purposely omitted the mention of these problems, but there are problems to face in the height of their buildings and the conditions on which they have to be erected with which we do not have to deal. May we not hope that these two great countries may march on in friendly rivalry towards the goal of finding a national

expression in architecture? And may we not also feel that in doing this we are again doing something for our art, and that as time goes on, if we do it with human sympathy and human interest in each other's work, we are getting nearer the goal than at the present? We must thank Mr. Hastings for giving us an evening in which we are able to spend a short time in thinking of the broader issues of architecture, untrammelled by those ephemeral considerations, troubles, and hindrances which surround our work, and remind us that as gold is tried in the fire, so our work must be tried by pain.

Dr. J. J. BURNET, A.R.S.A. [F.], said it gave him great pleasure to join in the welcome to his old friend Mr. Hastings, and he was pleased to have the opportunity of making a few remarks in support of the motion so charmingly proposed by Sir Aston Webb. Dr. Burnet then read the following remarks:

I have always found the philosophy of architecture to be practically of limitless length and breadth, and I think Mr. Hastings is to be congratulated in reducing it to the principle that we must build as we live. "As we live" is so comprehensive a phrase.

One of our present-day difficulties, that "confusion" of which Mr. Hastings speaks, seems to me to be due to the fact that architect and client alike fear the simple expression of a new demand, and earnestly look for precedent to support them.

If we must have a style, I agree with Mr. Hastings, it might be called Modern Renaissance as defined by him. But why should we, as architects, talk of style, or think of it at all in our practice?

As students we studied more or less systematically, in the History of Architecture, all the styles, with the view of realising our historical position, and the full responsibility we incurred in proposing to practise architecture, to refine our sense of beauty, and to enlarge our architectural resource.

Did the Roman architects, to whom Mr. Hastings refers, consciously adopt a style? Did the designers of the aqueducts, or the triumphal arches, or the baths consciously adopt the style in which they worked? As a matter of fact, was each not simply an enthusiastic constructor in full sympathy with the past and the materials at his hand, entering into the problem demanded of him by his day and generation, and, from the basis of the education he had received, interpreting its artistic possibilities? Can we not do as they did—as our engineers and naval architects now do?—and as artists approach our problems simply as constructors, enthused by the conditions that each problem imposes, and, unconscious alike of our individuality, and of the style we are working in, leave it to those who follow us to recognise the individuality of the work and to catalogue its style? It should be sufficient for us that the

building is eminently suitable for its purpose, that it has been fearlessly yet faultlessly constructed, and that in its proportions and colour it gives evidence of the pleasure it gave its designer to express.

Instead of this we have now, on the one hand, the architect of culture and refinement who with difficulty gives attention to the smaller details of convenience, and regrets the changes of modern construction. His work is always interesting, and he invariably finds a cultured clientèle. On the other hand, we have a keenly business man, generally a good planner, ready to meet any demand without question—economic in his constructional ideas, though willing to spend any money on ornamenting the outside of his building; truthfulness of "motif" never worries him, and restraint in the use of detail and refinement and harmony of ornament never worries him: it is roughly suitable for its purpose, and he will never know how much better it might have been; his clients are men who know their businesses, know what they want, and mean to have it. Meantime such clients seem to cherish the idea that if their architect is an artist they will not get what they want.

I do not for a moment believe that there are not men now in practice who are at once artists and fearless constructors, but for the time being they suffer from the suspicion of both types of client—the one believing that he will not get what he wants; the other that what he wants will be expressed in forms with which he is unfamiliar and in which he will not recognise precedent.

The American architect seems to begin on another plane from us. America is still a new country, where the people have set out to attain their object in a direct and simple way. Many of their architects have been systematically trained at the Ecole des Beaux-Arts. They return to their country enjoying the confidence of their countrymen and give themselves whole-heartedly to the solution of the problems that arise, sympathising in their clients' object and expressing it at once with a directness and culture which alone gives it a character which is rapidly becoming national. If it has resulted in thirty- and forty-storey buildings, these must be held to express the value of the land, which has risen owing to its geographical position, and it is creditable to the profession there that it has been met with such frankness of motive and refinement of detail. It may be that such height of building should not be permitted by the authorities from the point of view of the health of great cities, but with that the architect has not to deal, and it would be well if, freed from our cultured criticism, which seems at present to confine itself to the appreciation of refinements and precedent in our work, and to ignore simplicity, breadth, and those essential qualities of architecture, of conception, we could meet our problems in a similarly direct and simple way.

We must all agree with Mr. Hastings in his reference to the involuntary education and refinement of the public, attained by breadth and beauty in the plans of American cities. The newness of their cities gives American architects more or less a free hand, but much could be done here if the authorities would clearly define their requirements and we had the courage to make our improvements to a scale which would indicate, not only some attempt to meet public convenience in the present, but a greater belief in our continued expansion.

Perhaps one of the most surprising things in American cities, as well as one of the most encouraging, is the evident belief which those responsible for architectural improvements entertain with regard to their continued expansion. There is evidence everywhere of absolute belief in the future expansion of each city, and it seems to be taken for granted that the citizens may be trusted to use to the best advantage the opportunities which the authorities give. I have felt personally the enthusiasm which such a spirit creates in Washington, although I have not been there since the larger improvements were taken up. The same is true of other cities. It is perfectly wonderful to pass through some of their newly laid out cities, and feel the inspiration of the general hopefulness—I might go further and say the dead certainty—of the future which this bigness seems to indicate.

I do not quite follow Mr. Hastings in his criticism of Richardson. Surely each man must do what he feels in him, quite irrespective of how his inevitable imitators may misuse his details. I cannot think he should be blamed for their failure. I speak open to correction, but I think that in more than one of the earlier high buildings, Richardson's spirit was the principal influence in introducing that frank verticality of treatment which has now become the characteristic of the most successful lofty buildings. Those who know Mr. Hunt's entrance hall to the Metropolitan Museum will find it difficult to avoid regret that he was not spared to meet the modern problem of the extension of the Museum, ably as it has been dealt with by Mr. McKim, whose work is more familiar to us and represents much of what is refined and cultured in American architecture. In our guest we are meeting a more modern spirit. I remember with what enthusiasm we received illustrations of one of his first works, one entirely in the spirit of the Paper which he has just read. I refer to the hotel at Ponce de Leon, a charming study of what can be done, in the style of the old Spanish Southern American work, to meet present-day requirements. We all know his great work at the New York Library, with what delicacy and care the needs of this great institution have been studied and with what ease and refinement they have been expressed; and it was with very deep regret and keen sympathy that we heard of the death of his partner shortly after its completion

and before it was publicly opened, when he would have shared in the full measure of praise bestowed upon one of New York's finest buildings. Mr. Hastings is a busy man. Culture, mastery of detail, and true breadth of grasp characterise all his work. That he has been able to give time to come to us to-night and delight us with such an interesting and able Paper is only another tribute to the old adage: "Tis the busiest men who have most time!" I have very great pleasure in seconding the vote of thanks proposed by Sir Aston Webb, and in wishing Mr. Hastings godspeed in the work before him.

PROFESSOR MOORE: Modern architecture is a little out of my line, but I was very much interested in Mr. Hastings' discourse. He gave us a great many points to consider. I quite agree that modern architecture should be modern. But I have never been able to share the interest which many of my friends feel with regard to a modern style, because I do not think that a style of architecture can ever be brought into being by any sort of direct effort to produce a new style. A new style of architecture when it comes will come, like the Kingdom of Heaven, "without observation." Our business is, I think, to attend to the plain matters of practical building, and let architecture take care of itself. We are suffering a little from architecture. If we have a real sense of what is beautiful in design, and if we provide in a straightforward way for the needs of every given case, we shall certainly not make a thing that will be unpleasant to look on, and we shall be on the surest road we can follow to arriving at something pleasant and agreeable to the eye. I hardly like to make reference to a case that comes very near home to me, but I had the honour of being Director of the Fogg Museum of Fine Arts in Harvard University. A sum of £50,000 was available to construct a small building suitable for the needs of that Museum, and one of our very best architects, a friend of mine and of many gentlemen here, and a most competent man, was employed to design this building; but it is no exaggeration to say that there was not a foot of wall space provided on which a work of art could be seen to advantage. I do not think that speaks well for modern architecture. The designer was thinking too much of his architecture, and not enough of the uses which the building was to serve. He started with a *parti pris* as to the design of the façade, and sacrificed everything else to this. He made an Ionic order, and surmounted this with a low attic story—the whole being very pretty as an abstract composition, but wholly incompatible with the proper lighting of the interior.

THE PRESIDENT, in putting the vote of thanks, said:—Professor Moore, who is a master and a writer of great distinction, and who has stimulated us much by his critical writings on Gothic Architecture, has—and has every right to

have, learned man that he is—very pronounced and definite views on architecture. And he has been first in the field to-night with the view that the architect is the source of all evil! I shall come to that again later. But I can tell you that Professor Moore has the courage of his convictions and opinions. When he came to this country—and we are very glad to have him here, and I hope we shall often have him within these walls—and when he wished to have a house built, he built it himself. So, you see, Professor Moore's opinion of modern architecture is a very deep-seated one, and I do not think that any arguments of mine will dislodge him from it. We have been very fortunate to-night for many reasons, more particularly because we have heard so many different views of the way future architecture will develop, and as to the present position of architecture. I think myself that architects must be sometimes tempted to give up all discussion, and to simply do the best they can in their own work, and not discuss it any longer. But I do not think that would be the right thing to do, because we must think what we are doing, and we have to consider what the next generation will do. I do not think my friend Mr. Burnet, who seconded the vote of thanks in some eloquent remarks, did justice to the modern architect. I understood him to say—and I hope I have not mistaken him—that we should approach our problem simply as constructors. I know Mr. Burnet does nothing of the sort—because I have seen his buildings!—and I do not think it is the right or the proper thing for an architect to do, because that is the function of the engineer, who goes about with his figures and produces some hideous results. Our business, being artists in form on the greatest scale it is possible for the human intelligence to aim at, is to try and drive these constructional forms into some beauty and rhythm, and look to such other matters as constitute true architecture. Therefore, I think that the sooner we drop this cant about architecture being mere construction, the better for all of us! Our old friend Sir Aston Webb made a most admirable speech. I listened to it very carefully, and yet thought it was somewhat disappointing. Here is a man whom we have all known, who has been one of the most prominent and most valuable figures in modern architecture, and who is pessimistic as to the whole issue of the case. He has pointed out that various men—in particular three distinguished artists—had done great things in their several ways; but where is the result now? Great performers though they were, they lived possibly in an unfortunate time. The last hundred years, as Mr. Hastings pointed out, have been, to a certain extent, years of anarchy, and I often wonder what such men as Shaw and Bodley would have done if they had been trained on the strictest lines of classical tradition. Sir Aston made a very amusing point about the porter at the railway station in the country. As he put it to you, it was

most convincing. But I feel, myself, as a mere man of affairs, that it all depends on the porter—that I should have come to the porter with an open mind, and had he been an authority on the subject I should have gone to whichever church he advised me to go to. That rather alters the situation, and I feel that many of us, both old and young, if we approach this subject with an open mind, feel that there is good in all directions, but we also feel that our own personal idiosyncrasy has to be considered, which is really the gist of what Sir Aston Webb said. You must recollect that Sir Aston is master of a fine and subtle form of irony, and we must not always accept too literally what he says. What his speech really amounted to was a plea for personal expression in architecture, and we shall all agree with him in that, as I am sure Mr. Hastings will. And now I come to Mr. Hastings, who has given us a most delightful Paper. Mr. Hastings only came here from across the Atlantic two days ago to read us this Paper, and I am afraid he is going to leave us this week. We have been fortunate in having from time to time our kinsmen from across the seas who have told us what they are doing in their various countries; and we have had distinguished American architects who have told us what magnificent buildings are being erected in their great country; but Mr. Hastings, with that admirable modesty which distinguishes him, said nothing whatever about his own work, and at the end he passed it over in a very modest, diffident, and depreciatory way. But we know what Mr. Hastings' work is, and we know quite enough about it to admire it very much. I should like to congratulate Mr. Hastings on the courage and originality of his Paper. With every word he said—except one or two historical references, and especially one or two things about the Louvre on which I disagree with him *toto calo*—I agree. And I admire also his courage, because he did not hesitate to say some very hard things about the Neo-Gothic, the modern Gothic, revived Gothic; and pointed out its unsuitability to modern conditions; and the difficulty that we must have in adapting it to those conditions. We should not complain if we found the original conditions which produced those masterpieces which we all admire. Incidentally, he stamped with a good deal of energy on the cry which has been revived from thirty years ago that the architect is the *fons et origo malorum*, and that the future of architecture is to be found in the unadulterated genius of the British, or the American, or any other working man. As he said, the workman is completely occupied with the question of long wages and short hours, and not at all with the regeneration of architecture. This, I hope, reinforced with such authority as that of Mr. Hastings, we have now heard the last of; it is a preposterous cry, and Mr. Hastings rightly took his stand on the principle of historical continuity. He is, I am glad to find, a genuine traditionalist; and he said, as many

of us have thought, and as I have myself heard Norman Shaw say many times in recent years, we ought to have revived the tradition of the eighteenth century. When we talk about reviving a tradition, we do not mean that we are to replace one revivalism by another. Architecture is different from that if it is to mean anything at all. In the first place, it is a matter of personal expression, and in the second place, as I have endeavoured to advocate in season and out of season for many years, the words and terms of architecture are like the words and terms of language. Words as such are merely so much vocabulary; their whole value depends on the use we put them to. As Mr. Hastings rightly said, "if we compose rightly, there is nothing which will not be new"; and that is the fact of the case. Each new problem means a new solution; it means a new composition, a rearrangement of pattern—with the old familiar details. The conclusion I draw from Mr. Hastings' Paper is that we must clear our minds in facing the future of architecture—and I am more convinced of the future of American architecture by the views he has advanced to-night, than by all the brilliant works of American architects that we have seen in this room, for if a distinguished and leading architect in America feels these views very strongly, there is no doubt that they will ultimately find their way to his colleagues in that country. I feel that what we want is to master the technique of the past, and apply it to the problems of the present, for in that way only shall we lay the foundations of the architecture which we are all after. And what we also want to do is to throw overboard a great deal of archaeology, or rather, of sentimentalism, and to apply to this technique and these problems the dry light of intellect and common-sense.

MR. HASTINGS, in acknowledging the vote of thanks, said he felt very much gratified at what the President had said, and he felt hopeful that his Paper had been suggestive, for it had brought out arguments and a discussion which had been most interesting to him. Touching on some of the points raised, he should like to pay tribute to the genius of Sir Charles Barry, one of the greatest architects of the 19th century that any country had produced. His Reform Club building, which had been referred

to, he considered one of the most distinguished works of the century, and illustrated, as well as any building which might have been mentioned, the principles of his Paper. Barry came at the time of the awakening of research, when architects were travelling all over the world, and a journey to Italy had become a very simple matter. There was no reason, therefore, why he should not have been influenced by Italian art; and yet he was distinctly modern. For the Travellers' Club building he made one of the best plans, from an artistic point of view, which had ever been made in England. It was not until later that he lost sight of the traditions which he had been trying to contend for. His later work, he believed, was influenced by cheap prints, which were circulated all over England, expressing the views of men who had only a superficial knowledge of architecture. Those were not the men they should look to as guides to tell them what was good and what was bad in modern architecture. Those were the people, especially in Anglo-Saxon countries, who had led architects astray, inducing them to revive Mediaevalism and to adapt the art of a period long past to express the conditions of modern life. Sir Charles Barry was one of the first to suffer from that influence. Sir William Chambers, one of the greatest architects that England had produced in recent times, had never suffered from it. Another point he must refer to. It had been suggested, he believed, that he had in mind a new style of architecture. That was just what he wanted to fight against; he did not want a new style. He wanted the traditions, and that they should live up to the traditions, not of four or five hundred years ago, but of their fathers and grandfathers. Those were the traditions which had held good all through the history of design, from the very beginning of things. And the man who would do the most harm would be the one who would break from the past and try to make a new style instead of working up a style from the facts and trying to adapt those styles to present life. This feeling of modernity we possessed unconsciously. We were modern without knowing why or how; but we were modern only by taking the work of such men as Sir Charles Barry and William Chambers, and adapting their art to modern conditions and for the solution of the problems of modern life.

EDUCATION AND TRADITION IN ARCHITECTURE.

SOME IDEAS SUGGESTED BY THE EXHIBITION IN LONDON OF THE WORK OF FRENCH STUDENTS OF THE ECOLE DES BEAUX-ARTS, PARIS.

The exhibition of work by students of the Ecole des Beaux-Arts which was held lately in the Rooms of the Architectural Association has been most interesting and instructive. That such a fine collection should be brought together in London speaks well for the energy and enterprise of those who conceived the idea and made it a successful fact. To our French friends and confrères who so readily and so courteously allowed us to see this work on our own side of the water which alone now divides us, we owe and offer first our congratulations on the standard of work shown, and next for the practical cordiality of which it is such clear evidence.

An exhibition of the kind we have seen is presumably intended to have some practical result. That result is to be expected in the sphere of architectural education in which so many of us are interested to such a high degree. It is hoped that at some early date work by English students may be seen in Paris. And if this aim is carried out it will be best devised to show something of those characteristic methods which both past and present students have adopted in this country. We are all, and must always remain, students if our work is to advance with steady strides from one stage of capacity to another. But I suggest that both recent and present methods should be shown, because the one will indicate what has helped to lead up to what some men are doing now, and the other to what others are, we hope, likely to do better soon.

What can we strictly call the characteristic English methods of education in architecture past and present? Many of us look back with regret on the haphazard misdirected, or entirely undirected, ways we have trod in the attempt to reach some standard of efficiency in the general, or special, knowledge necessary. Those days have passed, and not without beneficial results on the architecture of to-day. At least some of us are vain enough to hope that this is so. For the younger men the chances have been better. Paths have been prepared for them. And we hope these are not so fenced that they may not stray on either side of the road occasionally in search of gleanings they may make their own. They will thus add to the store which the course of years is piling up for the honour of their race and age.

What are these paths? Do they lead anywhere? They seem most of them to be very short, and lead to a brick wall. Are they not a series of isolated class-rooms, lecture-halls, studios, articles of pupilage, having no definite, or defined, relation

to any dominating central school, or university, of all the arts? Are they not also largely pressing one solitary doctrine of architecture at the expense of many others equally vital, rather more virile, as interesting, as sane, as applicable to modern needs as the Italian forms? These schools of instruction variously placed, wisely distributed, have little or no link between them, unless it be that provided by the Board of Architectural Education which the Institute has established. In these schools, all of them, whether specially for architecture or generally for the arts and the crafts, a base, a foundation, is provided. But are there any steps up which they lead? Is there any structure of which they are the beginning and to which there is a covering dome and pinnacle? Some men go on to the Royal College of Art perhaps, some to the Royal Academy Schools, and a few selected men from anywhere may now arrive in Rome. There is, however, no recognised central body, or school, as a climax to the whole. And though in the future some of our best men among the architects, painters, and sculptors will have the advantage of residence and study in Rome, it may not be inopportune to hope they will be taught that all ways to-day do not lead, and need not lead, to or from Rome alone. Other centres, both of earlier and later sources of study and inspiration, equally useful and applicable to the modern point of view, might be suggested. And this not alone in the stylistic sense, but also in that of plan and construction. These last are and must remain the two basic elements of style, taken together with those of climate, materials, national or racial propensities, and the personal ideal in art or faith.

It seems unnecessary to attempt any detailed consideration of the several works our French friends have so kindly allowed us to see. But a few remarks will suffice to show one impression conveyed by the exhibition as a whole. It has given us some insight into the general methods pursued and the results achieved. Broadly speaking, these suggest some few leading considerations.

The first thing that becomes manifest is that France as a nation has more regard for architecture as a fine art than we have here. It is recognised officially as something that nations may do well to foster and encourage. And then it is seen that education in the arts is organised; that architecture, painting, and sculpture are considered as intimate relations, each aiding, and adding to, the lustre of the other. Adequate instruction under efficient control is provided for in the atelier system. And these separate individualistic schools, or small colleges as they may almost be regarded, are not left in their isolation, but are given a focus, a point, an institution to which they lead in the great national school at the Ecole des Beaux-Arts, the University of the Arts. This atelier system is not, as some have supposed it to be, a mere arrangement by which crammers and schoolmasters may get fees

and turn out machines capable of producing drawings only. Each is a school or coterie of students working together under the direction of a practising artist. It is the French parallel of the English pupilage system, but in some ways we may suppose it is rather better managed in the interests of the students themselves. They are, it is evident, taught to think, to draw, and to design the general and detailed conception of a scheme, in its plan as well as in its external realisation. They are not used as mere tracing clerks or superior office-boys.

At the same time, no man in an atelier, any more than an English pupil, can be made to achieve any greater capacity than he has the mind, ability, and will, to reach himself. In the end the result will rest with individual intelligence and personal effort.

The nature and quality of modern architecture must depend on the methods of modern education in architecture. We need to find a sound common-sense body of doctrine for the arts which will provide clear, reasonable principles applicable to every emergency and opportunity. It is this foundation in principle that matters now, as it has mattered always in the past. If in some ages of architectural development which indicated a real evolution we cannot now discover a record of any accepted doctrine definitely indicated, we can at least by methods of analysis see from results what principles were the guide to practice. But a living tradition in every vital age of art certainly carried its doctrine with it, and expressed it in the practical application of principle.

The pupilage system here, and that of the atelier in France, are the application to architects of the old apprentice method in the trades and crafts. And this method was the practice of all schools, all industries, through the centuries when tradition and this way of teaching gave us the masterpieces of the world in the arts, and in literature.

It was a system of specialised training which proved its own success, because it was founded on a common-sense use of the common-senses in a man. Modern educational systems have so largely forgotten the five senses. They try to teach by preaching only, and forget how good an instructor practice is. The appeal to the mind is always through the ears, too little through the eyes, and not enough by the hands. These are the three real educational inlets to the mind. Some who have never learnt anything in, or through, books have risen to an appreciation of books through things they have been able to see and feel. We are now the slaves of books. Perhaps when books were few, men were enslaved by things, but it was a condition of slavery in which men were masters of the things they served and used so well. They were able to see and to enshrine ideas in things with a quick facility denied to those whose senses are dulled by too much absorbing of other men's thoughts. It

might be said that we spend too much time telling men what others have thought and done, so that they lose both the time and inclination to try and do, or think out, things for themselves. The best way to learn a thing is to try and teach, or do it.

We might perhaps with advantage make it more a point in education, or rather instruction, to shew men how to study old buildings before trying to design new ones. It would be merely to follow the accepted course in the study of letters leading up to arts in literature. Grammar and structure, phrase, rhythm, sense and idea: these cannot be well understood except by those who have been shewn how the old masters of poetry or prose framed the language in which they left their thoughts to posterity. In art we seem so much at variance with such sound method as this. We try too soon to produce without first storing our minds with the raw materials of production. Education in architecture seems to begin before instruction has been carried far enough.

It does not appear to be a definite part of a curriculum, either in Paris or in London, that the students should prepare studies of the earlier traditional work of any school. At least this is the impression given by the exhibition as a whole. It might be said in reply that a school for the study of design in modern architecture should encourage individual creative composition and not the study of archæology. Yet it is surely a fact that all the living schools of architecture in the past were intimately based upon, and closely derived from, a knowledge of the traditional and historical methods which preceded them, or were being used as the accepted manner of the time. For us here, or for our friends in France, to belittle these sources of inspiration must surely be unwise. It is doubtless an undisputed fact that any real progress in architecture as a fine art must begin with a close personal examination of old buildings themselves. It is too much the practice now to rely upon books, photographs, or the original graphic studies of others. The result is that men get a second-hand, instead of a first-hand, acquaintance with architecture itself. Perhaps it may be true that, on the whole, our students generally give more time to this method than some others, though it is quite evident that few among us devote so much time to the preparation of magnificent drawings elaborately finished as our French brethren who go to Rome. It may be questioned how far the mere making of drawings, however fine, is conducive to the production of architecture. But few will question the statement that a genuine study of architecture is better conceived and better accomplished by those who make it their business to study buildings as a whole in plan and arrangement, composition and design, in mass, in shadow or outline, and the relation of parts, than by those who see them and draw them piecemeal only. Any drawing of isolated parts may provide opportunity for the exhibition of skill in the presenta-

tion of what is beautiful in itself, and also as a drawing. But the study of a part is not equal to the study of the whole as an exercise in manual, mental, or imaginative enterprise. For a would-be architect to dwell in this way upon detail, and the delights of decoration, if it is done at the expense of larger views concerning the relative values of parts in a total composition, is to defeat the ends of his own existence. The one great justification for the modern position of an architect is that he is, or should be, able to grasp things in their larger relations, bringing subordinate parts into unity as portions of a greater whole, and to arrange a harmony in the decorative details which shall aid in giving some appropriate expression to the purpose of the building. To be able to do this he must plan the whole, construct the whole. And in doing these half the battle of designing the whole will be fought, and his attention becomes free to play in fancy, and in fact, with the subordinate, but complementary, things as their relative importance requires.

It has always seemed to be rather a weakness in our own methods that we do not sufficiently emphasise the fact that in architectural education men should be required to shew that they have personally made themselves acquainted with typical buildings of selected periods of architectural history. Such a requirement might be so framed that the work indicating this familiarity with standard examples should shew that all sound architectural and structural principles have been considered in preparing it, and that the reason for the distribution of parts in relation to the whole is appreciated. If during a four years' course several comprehensive studies of old work, each different in character, design, and detail, were required, the result must surely be a marked improvement in capacity for creative design. Particularly might this be the case if, during the course, a certain limited number of the studies in design had to be prepared in accordance with the principles and details of certain special periods of architectural development laid down by the master directing the studies.

What is the standard by which we are to measure architecture as a fine art? Is it by that of the Italian Renaissance, of Greece, Rome, Byzantium; or by that of the Gothic era, early, middle, or late? During the period in which work generally called Romanesque was developed many principles and methods were used we should do well to watch. But are there no other types along the lines of experimental tradition at which we may look for standards, not of taste, of design, or of method only, but of procedure? We are too much accustomed to call things Classic which are Greek or Roman, and Neo-Classic if they are derivations from these peculiar schools. If we would understand, and estimate at its full value, the results of European effort in architecture we must realise something of the political, social, and religious condition of the

race and nation in which we find certain typical developments.

Surely the mere personal bias of some writers on architecture must not be allowed to narrow down our view of what architecture really is, and may be. Some, it seems, would have us believe that architecture as a fine art can never be seen except on the lines of Greek or Roman schools. Scale and proportion, mass, outline, symmetry, harmony between parts and the whole, between decorative detail and constructional main lines, are undoubtedly things to which little enough attention is paid. But are our students, or are the French students, taught them in the many and varied aspects in which they might be presented to them?

The use and the need, or otherwise, of balance and symmetry in relation to scale and proportion, in the major and minor parts of a composition, might be a useful theme for many an instructor to open out to his students. Each subject might well be worked upon without any reference to detail in half a dozen traditional methods. The same might be said of the relation of solids and voids, texture, colour, and shadow.

Grace, elegance, reticence, dignity, severity, action or rest, may sound mere words, but they must often be held in mind as the foundation on which to base design. The dominating sense in the expression of so much work to-day is surely not one which satisfies us generally. Personal elements well stated, in place of impersonal ones, may have their value and their interest, but it is a fading interest unless the personal feeling or character expressed has something fine about it which may appeal in general to the high motives of humanity.

I should suppose that some of the aspects of Roman and Greek art are as entirely foreign to the real French temper as they are to that of the English as a race. The political, social, and religious attitude of both races is so entirely different from that under which Rome and Greece developed their arts. Though the artistic principles we may find in the work of these elder folk will often stand every test of soundness in design, as far as they were able to carry them, for us to suppose that such principles are confined within the limits of certain constructive methods seems rather a narrow view to hold.

Is there really nothing classical in Gothic art or in the many lively and interesting derivations from it? Much Gothic sculpture, carving, and colour is, as a part of architecture, in its way quite equal to that of Greece or Rome. And this both in technical skill, composition, and expression. Doubtless they are but parts of the detail and decorative substance of an architectural whole, but as such they give a stamp of character and type of distinction to all they were used to embellish.

It is not suggested that Gothic art as it developed, and was applied, in ecclesiastical buildings should be copied or merely translated into terms of modern phrase. Any such attempt would be quite as dull and insipid as many efforts to misuse the teaching of other traditional schools. But it is definitely claimed that students who close their eyes to the great scientific and intellectual achievements which grew out of, and developed under, the influences of the Gothic school, and its derivatives in Western Europe, are missing the opportunity of studying principles of freedom which may and will go a long way in helping them to solve the difficulties, and meet the practical as well as artistic claims, of the future.

Let us not blind ourselves to the great principles which may be studied in every traditional school. For it is in such principles, and the things we may develop from, and through, and beyond them, that the hope of modern architecture is hidden. Principles will stand, details in decoration must change.

It is to the pedantry of bookish scholarship we must assign the responsibility of checking a new course in the enterprise of architectural development. In both England and in France men were on a voyage of discovery and adventure when the Italian influence asserted its claims to scholastic superiority. What the Church and State had refused in one way the laity accepted in another during and after the Reformation era in Europe. A Roman art began its domination over the native national arts.

In the train of a Reformation period in faith followed a revolution in art and letters, the result largely of conquest by arms. The course of historic evolution in architecture was snapped—or rather sapped, for the process was not rapid, but slow, which stifled free speech in art and substituted that form dictated by patronage and power. It was in those days the privilege of the wealthy few who could travel, or read, to dictate and enforce their views on the native skill and genius of the craftsmen, those heirs of immemorial traditions in art as well as life. It was thus and by these means that Italian thought supplanted both the native French and English tradition before it had time to evolve new methods, along old lines, to meet new needs. These traditions were stepping-stones with which the years were paved through centuries of a consistent logical progress which led to the threshold of the present before the door of the future at which the holders knocked to see what lurked beyond. From the two Roman centres in the Roman Imperial age two interesting streams of development in art emerged. The clash and then the mingling of Latin thought on the one side with the Eastern Barbarians, among whom were the Greeks, gave us Byzantium and the daring experiments of the Byzantine era. On the other side, the Barbarian elements were, it might be said, purely Teutonic and Celtic, and gave us the

marvellous developments of Gothic art in France, Spain, and England after Latin influences had been withdrawn. Apart from the mingling of racial strains suggested, the tribal, national elements were pure, strong, and emphatic. And it is on this, and from this element and condition, no doubt that the decisive character of the older forms of artistic tradition in architecture and the complementary arts is derived.

Modern States present a new condition, both in Europe and elsewhere, and consequently it is, perhaps, unlikely that such distinctive national strains in the arts will ever appear again. Though national genius and national aspiration are still evident, and perhaps growing stronger than they were as they emerge from the chaos of a spurious cosmopolitanism, the conditions and needs of the future can never again be those of the past. We must therefore in art, as in life, prepare for the living future, and not attempt to dwell with the dead citizens of the buried cities of the past.

Tradition and education in letters have given us the modern literatures of Europe as they had given us architecture and the arts up to the period mis-called the Renaissance. A revival, but not rebirth: a revival too, which, though it did bring much new life, caused much decay of vigorous life and broke a thread of life. Do not men who write to-day do so in their own native tongues? Did not the Middle Ages produce these tongues, borrowing from earlier ones what tradition, custom, and practice required for their construction? Did they not, when this was done, discard the pedantic use of languages which were as dead as the civilisations they represented? And in the result can we admit any real loss in vitality of thought, expression, ideal, or aim? The principles of construction, and the ornaments of rhetoric, in the classics of modern literature make use of the classics of earlier days, but they do not attempt to copy them, nor even adapt, and apply, them so as to concoct a medium for modern use.

It is over the classics of Greece and Rome that there is so much dispute in the schools where these alone seem to be regarded as "the classics" exclusively. If this represents a claim for breadth of view in education it is an extremely narrow one. Are there no other classics in literature or art equally able to refine expression and cultivate ideals, in thought and manners? Surely the humanities are to be found in the arts, or discovered through them, as much as in letters, both in early and later ages.

The advocate, therefore, who writes in English and advises us to design in Greek or Latin forms to the exclusion of those born with the language in which he pleads his cause is neither consistent nor practical. He borrows from the language of Chaucer, Spenser, or Shakespeare in order to argue against the tradition and principle which made it possible to produce their works of art in letters, and that of their contemporaries in architecture.

CORRESPONDENCE.

The British Prix de Rome.

26th May 1913.

To the Editor, JOURNAL R.I.B.A.,—

DEAR SIR,—Will you permit these rather late remarks to follow the article which Mr. Phené Spiers kindly wrote after the exhibition of M. Hulot's drawings at the Institute. I have to confess that personal convenience prevented me writing sooner; but even if this had not been the case I should have waited until now when the competitors for the "Grand Prix" have completed their work for the second stage of their trial. Indeed, as these remarks may be taken as criticisms on the organisation of the British Prix de Rome, I should have felt sorry if they had reached the ears of even a few of the competitors, and possibly disturbed the earnestness of the effort they were making. All the more so that only the great interest I take in this new institution, and my sincere wish that it may be as successful as it deserves to be, prompt me to say what I feel about it, in spite of the natural reluctance to comment upon what has evidently received the matured consideration of men thoroughly experienced in educational matters.

As Mr. Phené Spiers explained, the competition for the French "Prix de Rome" comprises three stages—but, the "Grand Prix" *par excellence*, the competition itself, is the final stage alone. It is the great effort crowning the student life of the architect by which he will attempt to win the greatest award offered by the country to the best student artist; it is, no doubt, a traditional remnant of the mediæval *chef d'œuvre* which the apprentice had to produce before obtaining the mastership. It corresponds also to the "thesis" of the doctors in Universities. As, however, the only conditions for competing are that one should be French, over sixteen and under thirty years of age, and that one should be declared capable by a known gentleman in the profession, it was thought unfair and unpractical to let too many well-meaning but unsuitable competitors go to the trouble of competing when they had not the slightest chance of success. Eliminating stages were therefore necessary, and this is decidedly the character of the two preliminary competitions in the French Grand Prix.

It would appear from Mr. Phené Spiers' description, and it seems to have been in the mind of the organisers of the British Prix de Rome, that there should be (as it were) three gates gradually more difficult to get through before reaching the goal of the Grand Prix. This is not quite exact as far as the French institution is concerned. The real point is to eliminate from the one competition all those who are not in sufficient training for it.

First of all, it is necessary to ascertain that the would-be competitors have a sufficient knowledge

of the "analytical" elements of architecture; that they know enough about columns and pediments, vaultings, cupolas, and so forth; in short, one must make sure that they possess an architectural language in which to express themselves. The programme is, therefore, of a simple nature, because it is meant to bear only on the matter of *analytique*, and not on that of composition.

Having thus selected sixty students who can "talk" the language of architecture, one must be sure that the competitors have ideas; that they can put them in order and express themselves clearly over a given programme—that they know enough about composition. Students were selected first who know their grammar; it is now a question of selecting those amongst them who have mastered the art of discourse. For this purpose the programme of the second stage is very much extended. It is quite as comprehensive, sometimes purposely more complex even than that for the "Grand Prix" itself—but, the work required on this programme is specially and purposely limited to an *esquisse*, or sketch, and purposely only twenty-four hours is given for its execution. Indeed, the student must not be tempted to waste his time in showing his ability on details (he has already been tried on those); one wants to see his power of composition; one wants to know whether he sees clearly through a complicated programme, and what direction he will give to its main elements.

This stage of competition can only be done *en loge*. Indeed, what would be the good of the signed declaration that the work was done by the student's own hand? One wants to know for certain that he has thought it out with his own mind. If the work was done at home the most scrupulously honest students would sign rightly the declaration, although one realises that two words from a master, or even three charcoal lines for advice, would be sufficient to determine the main lines of the composition. As it is on this point that the student is being tried, it would matter little whether he had afterwards drawn the sketch with his own hand or not.

Therefore, the character of the French "Prix de Rome" stages is thus: One selects first sixty students who have a sufficient knowledge of *analytique*, and out of these the ten best trained on the point of composition are selected to compete for the Grand Prix itself.

I quite agree with Mr. Blomfield that French methods of education cannot be applied broadcast to English students; in fact, I sincerely trust that those who direct these matters of education here are well aware of the danger of there being an attempt to "frenchify" English architecture—but may I be allowed to say that, when adopting a foreign institution, it is the spirit of that institution rather than the letter which should be adopted. The British Prix de Rome has taken the letter of the French one in this respect, that it offers three

stages to the competition. The first stage fills well the same purpose as the French. As to the second stage, it has been altered in a way which, to my mind, renders it first of all unnecessary, and furthermore dangerous. So much is required to be done on the programme of this second stage, and so long a time allotted to it, that the competitors, naturally anxious to be amongst the selected ones, are bound to make now the great effort they are expected to make in the real competition. This means two "Grand Prix" competitions instead of one. That is unnecessary. The best trained student will very likely not do equally well twice in succession. He may have produced a perfect piece of work at this second competition, but if he has given then the best effort he can give (and very likely he will have), he may, perhaps, do as well a few weeks afterwards, but there are great chances that he will not, and more chances still that this great effort will have tired him rather than trained him. Sportsmen would probably criticise such dispositions if they were applied to, for instance, a boxing contest, and I wonder what a horse-trainer would think if one of the conditions for running in the Derby was that the horse should have been placed amongst the ten first in a race of similar importance a few days before.

Are not the half-inch details for instance quite unnecessary at this stage? The first stage was enough to ascertain the knowledge of the competitors on points of architectural details.

As to the time allotted, it may have been feared that as the English students taken as a whole are, perhaps, not quite so well trained as the French in the practice of composition, a twenty-four hours' contest might have proved altogether unsatisfactory for the majority of them. Perhaps, indeed; but what is the drawback? The selection would have been easier—there would surely have been at least ten competitors who would have produced a clear and intelligent sketch, and that was all that was really wanted. If, however, twenty-four hours was really too short over here, at any rate the seven weeks allowed is, I think, too long. One of the solutions was, perhaps, to combine the two first eliminating stages into one; an objection to this would no doubt be raised that it might be difficult and unfair to make a selection of ten amongst hundreds at a single contest.

Then, what about public competitions? I also believe that the competitors who have to go through the ordeal are the best judges of what is fair to them, and this is where I see the great danger of this second stage as arranged. Is it fair to ask so much work for a mere trial of elimination? No doubt many would not mind an effort of a day or two who will hesitate in front of such a big undertaking, and for such doubtful results. It must be remembered that, at the end, only one laureate is selected, and there will be scores of disappointed ones who will sadly question whether

the time, the expense, and the great effort they were asked to make really served any useful purpose, and who will, no doubt, weigh in their mind whether it will be worth their while to "try it again next year."—Yours faithfully,

F. BILLEREY.

Registration and Education.

The University, Sheffield: 19th April 1913.

To the Editor, JOURNAL R.I.B.A.,—

SIR,—In the Registration Bill presented to the New York State Legislature, the provisions of which were printed in the JOURNAL of 10th May 1913, there are several points of great interest to English architects at the present time, and I should like to draw attention to two of them.

1. The acceptance, in lieu of examination, of diplomas from recognised schools of architecture. I do not remember seeing any such clause in our recent efforts towards Registration. It is possible, however, that the R.I.B.A. Registration Committee has realised the justice of accepting diplomas from recognised schools (including those in connection with our Universities) and the greater probability of the success of a Bill which acknowledges such schools in this manner.

2. The recognition of the importance of non-technical education. I quote from the provisions as printed in the JOURNAL:

"shall afford satisfactory evidence of having satisfactorily completed the course in an approved high school or the equivalent thereof, and subsequent thereto of having satisfactorily completed such courses in mathematics, history, and one modern language, as are included in the first two years in an approved institution conferring the degree of Bachelor of Arts."

This clause may surely be studied with advantage not only by our Registration Committee, but also by our Board of Architectural Education, though one is not, of course, so optimistic as to expect any such standard as this to become normal in England during the next twenty years.

When we in England feel that there is something wrong with our system of architectural education we modify our Intermediate and Final Examinations, introduce a special type of draughtsmanship for the Final Testimonies, or establish an atelier; but while many of us must realise that our methods of dealing with general education are far from satisfactory, we issue an edict to the effect that "The Preliminary Examination will remain unaltered."

In other words, when our structure shows signs of failure, we architects patch up the pediments and chimney-stacks, but ignore the faulty foundations, for these do not show.

Yours faithfully,

W. S. PURCHON [A.].

REVIEWS.

REINFORCED CONCRETE.

Cassell's Reinforced Concrete. Edited by Bernard E. Jones. Illustrated by 171 photographs and about 600 diagrams and working drawings. 40. Lond. 1913. 15s. net. [Cassell & Co. Ltd.]

The announcement that this volume is edited by Mr. Bernard E. Jones, Editor of the *Building World*, is not in itself an encouragement to members of the architectural profession to a blind confidence in its merits, for those portions for which Mr. Jones is responsible are so poor in substance that, forming as they do the introduction and first and last chapters, they are bound to affect adversely one's general opinion of the whole volume. We regret we cannot agree with his statement that every endeavour has been made to render the work complete. We would instance the absolute omission of Testing in any shape or form, or any chapter on Chimney Shafts, and also a very great deal of practical data which is obtainable as a matter of course in the thousand-and-one books on this subject is conspicuously absent.

In the introduction we are told by the editor that "a body is under compression when a load is placed on it tending to squeeze it;" and again, that "steel is strong in compression but much more strong relatively in tension;" and further, that "there is practically no jointing in reinforced concrete construction,"—all of which is absurd. Again, we were sceptical enough to test the "Comparisons" section in this chapter, and strongly advise a drastic revision of the alleged facts therein given.

The Historical Notes comprising Chapter II. we are told are verified as to dates from official records, but this statement leaves cold. Right or wrong, these facts, so far as they go, are inadequate and purposeless owing to the entire omission of present-day history, recording, for instance, the difficulties in this country owing to the lack of building bye-laws, and the proposals now in train to cover this form of construction. In any case, we pray that the history of reinforced concrete may never add its terrors to the syllabus of the Institute Exams.

Mr. Potter's note on "Concrete" is a sound though somewhat verbose treatise, lacking in concise data and weak on the section entitled "Conveying Concrete." We notice that the author is not strong enough to advocate dry mixing, the only allusion to which is a statement that this is resorted to in America when the work is required in a hurry!

The Steel chapter is hopelessly unpractical and valueless. Even such important considerations as the effect of rolling and drawing on steel rods are not touched upon, and there is scarcely a word from beginning to end of any practical use whatever. Such irrelevant matter as this would be well displaced by ordinary platitudes.

We have nothing but praise for the chapters on Stress and Theory. The author's capacity for making himself understood amounts to genius, and we are glad that he has had the courage to begin at the beginning and not follow the custom of plunging the student into a seething vortex of algebraical formulæ in which he must ere long be engulfed.

There is an exceedingly prolific chapter on the design and construction of Centering which we characterise as the best, with one exception, in the volume. The chapter on bridge construction is rather out of place in a book which we understand has been prepared especially for building work and not civil engineering.

In the chapter on architectural treatment most of the designs and motifs given are very distressing.

We are able, by the courtesy of the architects, Messrs. Nicholson & Corlette, to insert a block of one of several buildings which have been erected in the West Indies. This, we venture to suggest, shows legitimate architectural treatment. The only material other than concrete employed is a locally made tile, which is inserted to form strings and caps. There is a total absence of appliqué work, false panelling, &c., and it possesses the superlative merit of a design in reinforced concrete obtained entirely from simple and inexpensive centering. Much the same, however, can be said of the illustration on page 230 of the warehouse buildings in Cologne. This chapter constitutes quite the best on this aspect of concrete that has hitherto been published. Bearing somewhat on the foregoing is the question of surface treatment, but the interesting examples given are of little value in the absence of any indication as to their respective costs.

We are glad to note under "Waterproofing" that the best method of waterproofing is stated to be obtained not by the use of waterproofing compounds, but simply by good materials and workmanship intelligently employed.

Concerning the procedure of obtaining competitive tenders, the practising architect is recommended to employ an engineer to prepare his designs, it not being considered as part of an architect's duties, and to this we agree. At the same time, an architect should have sufficient knowledge of this material to complete his general designs and details before allowing the engineer to intervene. This will obviate, *inter alia*, the deplorable hide-bound conventionalities of design in this material which at present prevail.

The grotesque method of buying patented bars with designs thrown into the bargain is fortunately moribund, but is dying hard owing to those architects and engineers who are weak enough still to foster a method open to every kind of abuse and pregnant with risk. This is, however, only a degree worse than setting specialists in competition, whereby a premium is put upon bad design; moreover, the practical result is that their fees are



KING'S HOUSE, JAMAICA, B.W.I.: RESIDENCE OF H.E. THE GOVERNOR.
Messrs. Nicholson & Corlette, architects.

increased 100 per cent. to pay for the costs of preparing competitive schemes which have not fructified. The architect safeguards his client's interest best who employs at a reasonable fee an engineer upon whose scheme bills of quantities are prepared and tenders obtained in an equitable manner. As things stand at present it is advantageous to employ a specialist, always providing he is prepared to design with a reinforcing metal which can be obtained in an open market on the same footing as structural steel, timber, &c.

The Quantities chapter is written by one who obviously is only applying his general knowledge of quantities to this special subject, and in the circumstances serves no useful purpose. The sole illustration in this chapter argues an entire lack of practical experience unless we mercifully consider it purely as a diagram. Also the somewhat important subject headed "Prices for Steel Reinforcement" is conclusively treated by one single reference to a patented bar with the cost of fixing same in various positions for which, in our opinion, it is eminently unsuitable.

Throughout the whole volume the stereotyped statements which have been put forward for years past are set down with the usual smug content. What is badly needed to-day is a fearless exposition of the fallacies exploded by the latest researches, and we certainly consider there is sufficient of such material to fill a volume of respectable dimensions.

In conclusion, and subject to the foregoing criticisms, we can recommend this book to the student, both of architecture and building construction, for a general treatment of the subject. The book is readable, attractive, and beautifully

illustrated. In a revised edition we would not recommend increase in the reading matter, but rather an application of the editorial shears, as all that has been said could be compressed into half the space without detriment to its educational value.

PERCIVAL M. FRASER [A.].

THAMES-SIDE, temp. JAMES I.

On and along the Thames, James I., 1603-1625. By W. Culling Gaze. 80. Lond. 1913. 10s. 6d. net. [Jarrold & Sons, Warwick Lane, E.C.]

Mr. Gaze has in this volume undertaken the task of compiling from various contemporary sources a description of Court life during the reign of James I., and of other incidental events connected more especially with the neighbourhood of the River Thames, and in obtaining the material for his work he has evidently spent much time in useful research. The method of writing history by means of literal transcriptions of contemporary records and letters has the advantage that the information given is necessarily first-hand, and events are brought before us as they appeared to those who took part in them; but it also has the drawback that the material available is apt to be disconnected, and unless the work is treated simply as a collection of "excerpta historica"—which, from a student's point of view, has its advantages—it is necessary to fill in the gaps which occur between the excerpts in order to make a continuous and readable account. This is what the author has endeavoured to do; but if we venture to think that the result has not always been successful, it is perhaps not so much his fault as his misfortune

that the material at his command is at times too scanty to be pieced together satisfactorily.

In the first chapter the reader is taken for a trip down the river from its source to Queenborough. This subject alone is sufficient for a volume, and in endeavouring to compress it into the space of one chapter the author is only able to give a lightning glance at the numerous towns and villages on or near its banks, and there is unfortunately no map to assist one in following the writer on his rapid tour. The second chapter, relating to the numerous royal residences on the river, is again, we think, a disappointing one, as no attempt is made to describe the palaces at the period about which he writes, the author simply quoting a few somewhat disconnected extracts from documents in each case of little interest to the general reader; Windsor Castle, for example, being simply passed over with a list of the official posts in 1607 and the salaries attached to them, and with one or two items referring to minor repairs.

When we reach the third chapter, the most important in the book—that dealing with Court life—the author is on surer ground; a mass of contemporary information is available which he has been able to marshal in chronological order, and, with a few connecting links, to make a fairly consecutive account giving an interesting insight of the life at Court during James's reign. The period is rich in records relating to the numerous Progresses of the king and the general movements of the Court; and the gossiping letters of Sir Dudley Carleton, John Chamberlain, the Venetian Ambassador, and others, all of which are full of enlightening information, have been deeply drawn upon. According to a description given of James by Sir Anthony Weldon, he seems to have been uncouth in person, somewhat deformed, and not over delicate in his manners. He was a man of tireless activity, spending day after day in the saddle following the staghounds, and constantly moving from one residence to another, his restlessness leading the Earl of Pembroke, the Lord Chamberlain, to remark in one of his letters that the Court was in perpetual motion; and in addition there were the numerous Royal Progresses which he undertook to different parts of the Kingdom, so graphically described by John Nichols, which must have frequently spelt ruin to his numerous, and at times we expect unwilling, entertainers. When we consider the difficulties of travel in those days, and the large retinue which generally accompanied the Court, we can imagine the onerous work which this perpetual motion must have entailed upon the Court officials.

One of James's foibles was to confer knighthood on his loyal subjects; early in his reign he commanded all persons having land of the annual value of £40 to come and have this dignity conferred upon them and to pay the obligatory fees, this being possibly a matter of consideration; hardly a week passed without a batch of gentlemen

being dubbed, as many as three hundred being knighted on one occasion. Court pageants on land and water, masques, and tournaments frequently took place, and some contemporary accounts are given which describe them in much detail and are interesting reading.

Subsequent chapters deal with Naval Construction, in which a very detailed description of the launch under somewhat unusual circumstances of the "Prince Royal" is given by Phineas Pett, the King's shipwright, and with life and traffic on the river, containing an interesting account of the great frosts of 1607 and 1621, when the Thames was frozen over and fairs were held on the ice. The last two chapters, treating upon Pleasure and Sport, and upon the Lord Mayors' Processions on the Thames on the occasion of the annual progress to Westminster on the Feast of St. Simon and Jude, the old Lord Mayor's Day, are also entertaining.

The absence of any foot-notes is we think a matter of regret; we should like to have seen the authorities quoted for the excerpts, for the use of those who desire to pursue the matter further, and also occasional notes amplifying information given in the text. To take one or two instances: on page 129, in reading the account of the wedding festivities of Sir Philip Herbert and "the Lady Susan," a note that she was the daughter of Edward Vere, Earl of Oxford, and that he was subsequently the fourth Earl of Pembroke, would have added interest to the account. And again, on page 465, the bare quotation of an order for the payment of allowances to Philip Henslowe and Edward Allen, Masters of the King's game at Paris Garden, conveys little information in itself, but a note to the effect that the latter was Edward Alleyn, the actor and the munificent founder of Dulwich College, and that the former was his father-in-law and a well-known theatrical manager who, in conjunction with Alleyn, built the Fortune Theatre in Golden Lane, Barbican, described by Chamberlain as "the fairest playhouse in the town," would have shown that they were interesting personalities.

In conclusion, the volume contains much useful and entertaining information, some of which has possibly not been published before, and is here conveniently brought together, and we must thank the publishers for issuing a book that is, for its size, commendably light in weight.

WALTER L. SPIERS [A.].

Books Received.

- Garden Craft in Europe. By H. Inigo Triggs, A.R.I.B.A. La. imp. 8s., with over 200 illustrations. 35s. net. Lond. 1913. [B. T. Batsford, 94 High Holborn.]
 Fire Protection in Buildings. A Practical Treatise for Engineers, Architects, Surveyors, and Property Owners. By Harold G. Holt [A.] 8s. Lond. 1913. 8s. 6d. net. [Crosby Lockwood & Son, 7 Stationers' Hall Court, E.C.]



9 CONDUIT STREET, LONDON, W., 31st May 1913.

CHRONICLE.

The Royal Gold Medal 1913.

The Right Hon. the Earl of Plymouth, P.C. [*Hon. A.*], has kindly accepted the Council's invitation to present the Royal Gold Medal to Mr. Reginald Blomfield on Monday, 23rd June.

Mr. Hastings' Paper.

A numerous company of members and their friends assembled at the Institute last Monday evening to hear the Paper on Modern Architecture, and to do honour to its distinguished author, who had timed a visit to Europe at this season for the express purpose of coming to London and presenting his Paper in person. Mr. Hastings, accompanied by Mrs. Hastings, crossed the Atlantic last week and came directly to London, arriving here on Saturday. On Monday he was entertained to dinner by the Council, and on Tuesday the President gave a dinner in his honour at the Arts Club, among the guests being Sir Ernest George, A.R.A., Sir Henry Tanner, C.B., Messrs. Thomas E. Colcutt, Ernest Newton, A.R.A., E. L. Lutyens, A.R.A., Leonard Stokes, A. W. S. Cross, E. Guy Dawber, Walter Cave, George Hubbard, F.S.A., and Mervyn Macartney. Among the visitors present by special invitation to hear Mr. Hastings' Paper were Lord Algernon Gordon-Lennox and the Hon. Blanche Gordon-Lennox, and Professor C. H. Moore, the eminent historian of architecture (late of Harvard University, and now settled in England). Mrs. Hastings was also present, with Mrs. and Miss Blomfield, and Lady Webb and Miss Webb.

At the conclusion of his Paper Mr. Hastings showed, and made a running commentary upon, an interesting series of slides which he had had prepared for the elucidation of his subject, and some of these figure among the illustrations on foregoing pages. By special request he gave also an illustrated description of the magnificent building of the New York Public Library that he designed and carried out in association with his partner, the late Mr. Carrère.* By the kindness of

Mr. Hastings we are able to include some views of this building among the illustrations to his Paper.

The *Times* of Tuesday devoted a leader to an appreciative review of the Paper, summing up its gist very neatly in the following passage:—

There is no need for him [the architect] to attempt the impossible task of creating an architecture new in all its details and methods, any more than an original writer need create a new language to express his originality. Indeed, an original writer does not think about his originality at all; he thinks about what he has to say, and he uses the best words he can find to express that clearly and precisely. So an architect should use features and details from the past as he needs them; but he should not use them to show that he is an artist. That needs no showing if he does just what he has to do as simply and exactly as possible. We think a building cannot possibly be artistic unless it is in some style that we recognize. We should remember that, when the greatest buildings of the past were new, no one recognized the style in which they were built. No one in the thirteenth century praised Chartres Cathedral as a magnificent example of Gothic; and the audience which first heard *King Lear* did not say, "This is a magnificent example of the Elizabethan drama." They praised it as a good play, if they had the wit to see that it was one; as for its language, it is the language that a poet of that time would naturally use to express himself. So when we see a good building we ought to praise it as such without asking any questions about its style. But often we are not aware of the beauty of our best modern buildings just because we are not conscious of any style in them. We say that they are mere building, not architecture; and yet, if future ages discover any style of architecture peculiar to our time, we may be sure that they will discover it in those buildings which solve without irrelevance some structural problem of our time.

Professional Art Critics and the Art of the Day.

Mr. A. S. Cope, R.A., takes seriously to task the professional art critics for their attitude towards modern art and their repeated assertions of its decadence. "In spite of the fact that 'all these things are against us,' Great Britain has a proud record of fine artists, and I, for one, believe that the torch will be carried on," says Mr. Cope in a letter to the *Morning Post*. "If by decadence is meant those violent explosions of paint which for the past season or two have amused the public and bewildered the art critics, the great mass of the profession would agree that decadence was upon us. But our country has no cause to be ashamed of the work which has been produced—alike in painting, sculpture, and architecture—during the past, and it is generally thought that the work exhibited annually at the Royal Academy is on the whole considerably above the average of other countries. To expect that that or any other exhibition should contain nothing but works of the highest standard is, of course, unreasonable, but if only our art critics had all of them that wide view and real knowledge which we could wish them to possess, they would be able to pick out correctly the good pictures when they first appear, instead of having

this building, but was prevented by the lamentable accident whilst driving in the streets of New York which resulted in his death in March 1911.

* It will be recalled that the late Mr. Carrère some three Sessions ago arranged to read a Paper to the Institute on

to wait until a century of competent opinion has enlightened them. A delightful example appeared in the *Observer* on the 11th of this month, which reprinted an excerpt from their issue of the same date one hundred years ago. In it their then art critic fell very foul of pictures by Mr. J. M. Turner, R.A., and Sir David Wilkie, R.A., saying that the latter's picture of 'Blind Man's Buff' (now in the National Gallery) was terribly wrong, and had, besides, some of the faults of that miserable painter Watteau!—or words to that effect."

Broad Sanctuary and its Surroundings.

The architectural changes in the surroundings of Broad Sanctuary made by the Wesleyan Central Buildings and the new Middlesex Guildhall, now being built opposite Westminster Abbey, will be increased when the scheme for the removal of Westminster Hospital to another neighbourhood is carried out. The question of the structure which is to take the place of Westminster Hospital was recently before the Westminster City Council, and it was decided to take steps to prevent any "desecration" of the site. The present position of the matter, it is understood, is this. The private Bill promoted by the corporation of the hospital, by which power is sought to dispose of the present site and to acquire lands for the erection of a new hospital elsewhere in the County of London, has passed the second reading; and negotiations are in progress between the London County Council and the hospital authorities for the insertion of amendments in the Bill, at the Committee stage, for such a rearrangement of the frontage level as will enlarge the space of Broad Sanctuary and further improve its architectural appearance. Sir Henry Craik, M.P., has also put down an instruction to the Committee, "to consider whether it is expedient, in dealing with the present site of the hospital, to widen the street leading to the Houses of Parliament by making the frontage level with the neighbouring building, and so providing, in the public interest and for posterity, an access worthy of the dignity of the situation."

The Old Houses on Clapham Common.

The governors of Westminster Hospital have the option of a site for the new hospital fronting Clapham Common on the north side and close to the parish church. This site is at present occupied by the picturesque row of old brick houses referred to by Sir Walter Besant in the third volume of the topographical section of his great Survey of London. This row of houses, he says, was built on a 200 years' lease in 1713, and are to-day sound and good, and are locally mentioned as the work of Sir Christopher Wren. Nos. 3 and 4 of this row, over the archway, were formerly united, and here was Mr. Greaves' school, where Macaulay was educated between 1807 and 1812. Under the arch-

way is seen the heavy gate through which the scholars entered the school, which was built in the garden. Tom Hood also received his education in this same row of buildings at the Clapham Academy, which consisted of the two red-brick Queen Anne structures now forming Clarence House and Mr. Stroud's school. The gates of Holyhurst and two or three others near by have the remains of armorial bearings on them, but are almost rusted away or thickly encrusted with paint.

Architects' Registration in the South African Union.

At the Annual General Meeting of the Cape Institute of Architects held on the 24th April, the outgoing President, Mr. Arthur H. Reid [F.], who for the last thirty years has been actively identified with the movement for the Registration of Architects, in delivering his valedictory address reiterated some of the leading points for registration, and gave some hints for the guidance of the new President and Council in piloting through Parliament the Architects' Registration Bill which they have in prospect. They would find, he said, the experience of the promoters of the Accountants' Registration Bill of the utmost value to them, if only to show the line of reasoning to be expected from a Parliamentary Select Committee. It was evident from the reports of the Select Committee's findings that they would in all probability view with disfavour: (1) The control of a Registration Roll of Architects by any body composed exclusively of architects; (2) The compulsory enrolment of registered architects as members of any professional institution; (3) The absence of appeal from the decision of the Council of any registered governing body. Their draft Registration Bill would follow the lines adopted by the Medical Act of the Transvaal, which governed the allied professions of dentistry, chemistry, and nursing, in the same manner as in their Bill they sought the control of quantity surveyors. There was no wish or proposal to interfere with the rights or privileges of persons at present practising as architects within the Union of South Africa, even if they were not qualified to the extent that was desirable in the public interest, but the control of that class of practitioner was absolutely necessary.

The question of Registration cropped up again at the Annual Dinner of the Cape Institute on the 28th April, when the principal guest of the evening, Sir Frederic De Waal (Administrator of the Province of the Cape of Good Hope), said he believed the profession would be wise if they did not seek power that they should not have; but if they would ask Parliament for power to deal with their own affairs, without seeking to deal with people not belonging to their Institute, he believed Parliament would grant them that without any difficulties. He believed that, having regard to the fate of the Accountants, architects would be wise in being

moderate in their request, by demanding only the power to provide proper professional status, to see that the people were not over-charged or under-charged, and to see that things were done properly in their professional household. They would be wise to remember that there were such things as vested interests, and that Parliament would never allow them to prevent anyone joining their profession who had passed the necessary examinations, and would never sanction any man being penalized who was already practising as an architect. What Parliament would be prepared to do was, whilst protecting those people who are at present practising and are not members of the Institute, to give the Institute the power to prevent the ranks of those people becoming enlarged, and would see that only proper people entered the ranks of the profession.

The new President of the Cape Institute is Mr. F. K. Kendall [A.].

Fellowship Books.

Mr. Batsford is publishing a series of "Fellowship Books," described as a new contribution by various writers towards the expression of the human ideal and artistic faith of our day. The publisher explains that the aims of the series are to recall the elemental truths whence springs all that makes life worth living, the factors that increase our common enjoyment of nature, poetry, and art. Mrs. Arthur Stratton is the editor of the series, and six volumes have already been published at the price of 2s. each net, viz., "Friendship," by Clifford Bax; "The Joy of the Theatre," by Gilbert Cannan; "Divine Discontent," by James Guthrie; "The Quest of the Ideal," by Grace Rhys; "Springtime," by C. J. Tait; "The Country," by Edward Thomas.

"Give stones and mortar to an idealist who has had the force and will to learn their uses and the control of them, and he will build you a cathedral," says Mrs. Rhys in "The Quest of the Ideal." "His idealism will give the mere rough material of his trade a value which is not to be measured. Give the same material to the cunning man of small brain, to the man who is called the practical man, and he will build you a hideous street, cheating as he goes, in which his lack of real practical sense is manifest, because, in flat disobedience to the commands of his Creator, he is creating an unremunerative ugliness, when remunerative beauty might have better rewarded him. Bricks and stones have often been the weapons of the idealist, and will be so once more in the future."

University of Sheffield: Department of Architecture: Vacation Courses.

An interesting tour in France has been arranged for the Summer Vacation Course in Architecture at the University of Sheffield. The route will be from London to Paris, Troyes, Sens, Auxerre, Vézelay, Semur, Dijon, Autun, Nevers, Bourges,

Blois, Orleans, Chartres, Paris, London, the time occupied being practically three weeks. The party will be under the guidance of the Rev. Dr. West [A.], formerly pupil of Viollet-le-Duc and of the Ecole des Beaux-Arts, and author of *Gothic Architecture in England and France*. The party will leave London on 4th August and arrive back in London on Saturday, 23rd August. Every facility will be given and the necessary permissions obtained for sketching and photographing. The fee for the course is twenty-two guineas (or nineteen guineas starting and ending in Paris), and this covers all the usual travelling and hotel expenses. The course is open to all who are interested in the study of architecture. Those desirous of joining the party should communicate as soon as possible with the Lecturer, Mr. W. S. Purchon [A.], The University, Sheffield.

Course for Builders' Pupils.

The University of Sheffield is arranging, in consultation with the Sheffield Master Builders' Association, a three-years' course of instruction to meet the requirements of students who are working with the object of becoming master-builders, or of occupying other important positions in building businesses. It is considered that by taking this course a student will acquire that knowledge of scientific and theoretical matters which will enable him to benefit more fully from his practical work during apprenticeship, and which will be of still greater value to him in later years. The course is a part-time one—six months at the University and six months at the Works each year for three years. Students attending the course must be at least sixteen years of age. As building work is becoming more and more scientific, this combination of practical work and applied science training of a high standard is likely to prove exceedingly useful, and should be not only of service to those who take the course but also tend to raise the standard of education in building work generally. Information about the course may be had from the Lecturer, Mr. W. S. Purchon, The University, Sheffield.

Heating and Ventilating Engineering Studentships.

We are asked to announce that the Institution of Heating and Ventilating Engineers are offering two Heating Studentships, tenable in the Faculty of Engineering at University College, London, each of the value of £50 a year, together with the amount of college fees. Candidates must produce evidence of having pursued a course of engineering training and of being familiar with the work of an engineering laboratory. Candidates who cannot produce such evidence may be examined in Mathematics (Pure and Applied); one or more branches of Engineering Science; French and German; Physics; Chemistry: the standard in each subject being that re-

quired for the Bachelor of Science in Engineering in the University of London. The qualifications of candidates will be reported on and the examination (if any) be conducted by a Board of Examiners appointed by the University College Faculty of Engineering, assisted by two assessors appointed by the Council of the Institution of Heating and Ventilating Engineers. The Research Students, who will be required to devote their whole time to their work and to pursue such courses of study in connection therewith and to undertake such researches as the faculty of engineering of University College may approve, will begin their work on 30th September next unless other arrangements are sanctioned. Applications should be sent in on or before Saturday, 15th June 1913, to Mr. Walter W. Seton, M.A., Secretary, University College (Gower Street, W.C.).

International Congress of "Hygiene and Salubrity of Dwellings," Antwerp.

The Fourth International Congress of "Hygiene and Salubrity of Dwellings" will take place at Antwerp this year from 31st August till 7th September. These Congresses owe their inception to the French Society of Hygiene, the first having been held at Paris in 1904, the second at Geneva in 1906, and the third at Dresden in 1909. The Congress will comprise four sections, viz. :—

I. *Hygiene of Emigrants*.—(1) Transport by rail from their place of origin; (2) Medical inspection on arrival; (3) Lodging on land: hotels, private houses, boarding-houses; (4) Foundation of special "house-complexes" or caravansaries; (5) Transport by ship: drinking-water, clothing, and night-quarters.

II. *Colonial Hygiene*.—(1) Private dwellings; (2) Collective dwellings (mining enterprises, plantations, &c.); (3) Infirmarys, hospitals.

III. *Hygiene of Ports and Ships*.—(1) Means to prevent the Contamination of Navigable Water-ways; (2) Prophylactic measures against the introduction of exotic contagious diseases; (3) Sailors' homes; (4) Passenger ships; (5) Men-of-war.

IV. *Development of Towns from the Hygienic Point of View*.

An extra subject, "Expropriation on account of Insalubrity," will be studied by the Congress, and consideration thereof continued by the Eleventh International Congress of Cheap Dwellings to meet at the Hague on 8th September and following days.

The subscription for members is 20 fr.; persons belonging to a member's family, 10 fr. All papers and resolutions must be in the hands of the Secretary-General before 1st July. Secretary-General: Walther Van Kuyck, The Town Hall, Antwerp, to whom all enquiries should be addressed.

Architects' and Surveyors' Approved Society.

In response to many requests from members of the Approved Society for other benefits than those provided by the National Insurance Act, the Committee have decided, subject to sufficient numbers joining, to form a Voluntary Section for the provision of additional sickness and disablement

benefits, pensions and death benefits. The membership will be limited to the architectural and surveying professions, and will not be carried on for profit, but managed solely in the interests of members by the same Committee as the Approved Society. The Voluntary Section will be open to all members of the professions, whether State insured or not, with no question of income limit. Under Table I., up to age 30, a member can secure 10s. per week in illness, disablement benefit of 5s. per week, a pension of 5s. per week, £25 at death and £12 10s. at death of his wife, for a quarterly contribution of 13s. Under Table II. the quarterly contribution is higher, varying according to the age of the member assuring, and the pension benefit is 10s. instead of 5s. Either table may be regarded as a unit, and can be doubled or trebled in return for double or treble contributions. The tables have been drawn up under the best actuarial advice, and are confidently anticipated to meet all requirements. A medical certificate of good health will be required at entry. The Society has also a Benevolent Fund which is supplemented by many members of the professions. This fund will be available to all members of the Voluntary and State Sections of the Society and to non-members who contribute a small quarterly payment to the Benevolent Fund. It may be drawn upon at the discretion of the Committee to meet cases of distress arising from continual unemployment, or to assist the widows and families of members. Full information will be furnished by the Secretary, Mr. F. R. Yerbury, 18 Tufton Street, Westminster.

MINUTES. XIV.

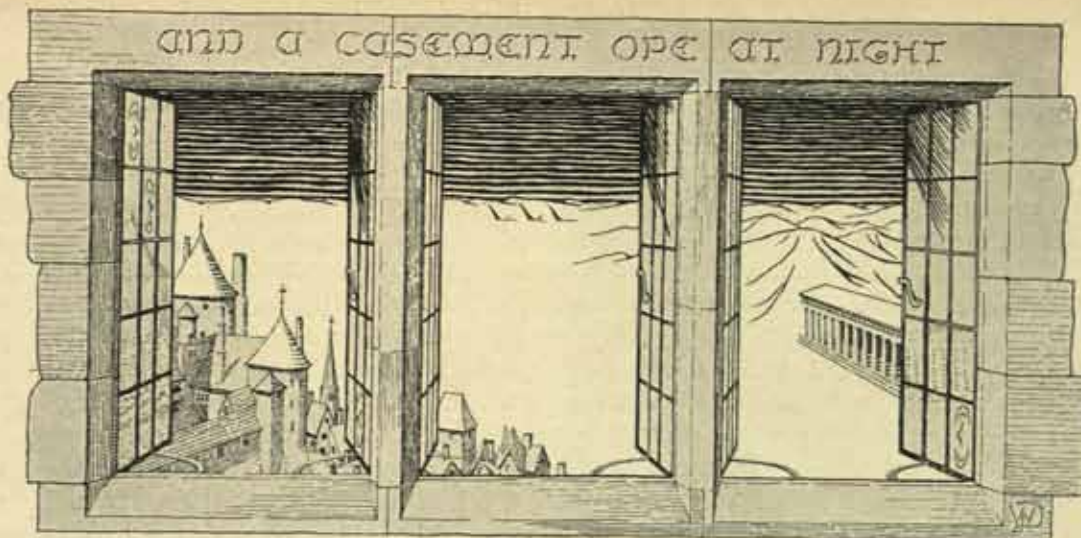
At the Fourteenth General Meeting (Ordinary) of the Session 1912-13, held Monday, 26th May 1913, at 8 p.m.—Present: Mr. Reginald Blomfield, A.R.A., *President*, in the Chair; 43 Fellows (including 12 members of the Council), 67 Associates (including 2 members of the Council), 24 Licentiates, 2 Hon. Associates, and numerous Visitors—the Minutes of the Annual General Meeting held 5th May having been already published were taken as read and signed as correct.

Mr. E. Guy Dawber, *Vice-President*, acting for the Hon. Secretary, announced the decease of Thomas Egbert Lidiard James, *Fellow*, elected 1893.

The following Members and Licentiates attending for the first time since their election were formally admitted by the President—viz. Arthur James Stratton, F.S.A., and Samuel Sebastian Reay, *Fellows*; William Godfrey Newton, Edward Ralph Douglas Selway, and Bernard Wardlaw Habershon Scott, *Associates*; Albert Anthony Fillary and Thomas Tyssen Grey Donaldson-Selby, *Licentiates*.

A Paper by Mr. Thomas Hastings, of New York, on MODERN ARCHITECTURE, having been read by the author and illustrated by lantern slides, a discussion ensued, and on the motion of Sir Aston Webb, C.B., C.V.O., R.A. [F.], seconded by Dr. J. J. Burnet, A.R.S.A. [F.], a vote of thanks was passed to Mr. Hastings by acclamation and was briefly responded to.

The proceedings terminated at 10 p.m.



THE PRESERVATION OF ANCIENT MONUMENTS.

By WILLIAM JAMES DAVIES [A.], R.I.B.A. Essay Medallist 1913.

Essay awarded the R.I.B.A. Silver Medal and twenty-five guineas 1913, submitted under the motto

"LES LONGS SOUVENIRS FONT LES GRANDS PEUPLES."

SUMMARY.

1. THE GENERAL ATTITUDE OF MAN TO THE PAST.
2. THE TREATMENT OF BUILDINGS IN THE PAST.
 - (i) General.
 - (ii) By the Greeks.
 - (iii) By the Romans to the time of Constantine.
 - (iv) By the Romans at the time of Constantine and the Barbarian Invasions.
 - (v) By the English in the Middle Ages.
 - (vi) By the English in the Middle Ages (Destructive).
 - (vii) By the English during the Renaissance.
 - (viii) By the English during the Renaissance (Destructive).
 - (ix) By Wren.
 - (x) Summary.
3. THE GROWTH OF ARCHEOLOGICAL RESEARCH AND HISTORICAL CRITICISM.
 - (i) The Origin in Italy.
 - (ii) The Attitude of the Wealthy Classes in Italy.
 - (iii) The Contemporary Attitude of Architects.
 - (iv) The Beginnings in England.
 - (v) The Position of Archaeology in the first half of Seventeenth Century.
 - (vi) The Assistance rendered by Societies.
 - (vii) The Collecting of Ancient Remains.
4. THE HISTORY OF THE RESTORATION MOVEMENT.
 - (i) The Origin of the Gothic Revival.
 - (ii) The Growth of the Restoration Movement.
 - (iii) Scott's Views on Restoration.
 - (iv) Ruskin's Views on Restoration.
 - (v) The Reaction.
5. THE MEANING OF "MONUMENT."
 - (i) Definitions.
 - (ii) The Inclusion of Natural Scenery in the Term.
 - (iii) Classification of the different kinds.
 - (iv) The Limitation of Date.
6. PRESENT-DAY TREATMENT OF MONUMENTS.
 - (i) The Reasons for their Preservation.
 - (ii) Cataloguing and Scheduling.
 - (iii) Treatment against Fire and Floods.
 - (iv) Treatment against Decay in Stone and Timber.
 - (v) Outside Risks.
 - (vi) The Practicability of Saving Monuments liable to Preventable Destruction.
 - (vii) Destruction due to Value of Sites and of Integral Parts of the Monument.
 - (viii) Destruction due to Bequests and the Interference of Rich Amateurs.
 - (ix) Restoration and Reparation.
 - (x) The Re-employment of Buildings that have passed out of Use.
 - (xi) Shams and Deceptions.
 - (xii) Earthworks and Excavations.
 - (xiii) Museums.
 - (xiv) Official Treatment in England.
7. LEGISLATIVE AND MINISTERIAL MEASURES.
 - (i) The Commencement of State Interference in various Countries.
 - (ii) Legislation in England.
 - (iii) Legislation in Italy.
 - (iv) Legislation in Austria.
 - (v) Legislation in Prussia.
 - (vi) Legislation in Bavaria.
 - (vii) Legislation in Greece.
 - (viii) Ministerial Measures in various other Countries.
 - (ix) Legislation in India.
 - (x) Present Views as to contemplated Legislation in England.
8. THE FUTURE.

BIBLIOGRAPHY.

1. FROM the earliest times man has desired both to perpetuate his memory and to recall the achievements of a past age. The desire to be remembered, to stand out distinct from the millions of bubbles before and after him, whether by means of his children or by carving his name in marble, is born with mankind. The wish to recall the past is more complex, and may be due to a variety of reasons. Curiosity may be excited by the unusual aspect or forgotten use of bygone objects; admiration, by their splendour, "see what manner of stones and what buildings are here"; or piety or patriotism, by the veneration in which they are held. "When your children shall ask their fathers in time to come, saying, 'What mean these stones?' Then ye shall let your children know, saying, 'Israel came over this Jordan on dry land.'" Reverence for the past exists in all but vulgar and shallow minds, and is seen in every age under different forms, whether shown by Crusaders fighting for the Holy Sepulchre or by Germans digging in the sands of Asia Minor. It may, however, be eclipsed by other feelings. Reverence may be excited by memories associated with the object or by events of which it has been the witness—"From the summit of these pyramids forty centuries look down on you"—but that attitude of mind may be overshadowed by veneration for the sacred or patriotic character of the monument; by awe—in a sceptical age more likely to be found with the uncultivated—at its gigantic size or sublime position; by delight and admiration for its beauty enriched by the hand of time; by wonder at the rarity or difficulty of its workmanship; by surprise at the value of its material.

2 (i.) A brief historical account of how ancient monuments have been treated in the past will show that, while buildings have been repaired, enlarged, altered and rebuilt, or in a few cases ruins that have fallen into disuse have been re-adapted for other purposes, nothing in the nature of restoration in its modern and, of recent years, odious sense,¹ was attempted, and that the present view that everything of the past is worthy of preservation at all costs has been of very gradual and of comparatively late growth. Man has not been slow to lay his hands on his predecessors' work to adapt it to his own needs or the fashions and art of his times. He has enlarged and added to it to meet new requirements, repaired it after his own manner and style when it has fallen into disrepair, and rebuilt it to suit the tastes or the more extravagant ideas of his age. He has even attempted to appropriate to himself for his own self-glorification monuments erected by others.^{2a}

2 (ii.) It has been pointed out by Fergusson that the probable cause why nearly all the great temples now found in Greece date from the forty or fifty years after the defeat of the Persians, is "that the old temples were thought unworthy of the national greatness and of that feeling of exaltation arising from the successful result of the greatest of their wars, so that almost all those that remained were pulled down or rebuilt."^{2b} The successive temples of Diana at Ephesus illustrate the fact of how the Greeks while rebuilding on the same lines yet employed the contemporary manner as then developed. The wooden columns of the Heraeum at Olympia were gradually replaced by stone³ as the same nation became more proficient in mechanical science.

2 (iii.) The sacredness of a building or of the rites performed in it has had the effect sometimes of preserving the form through centuries of constant use and through a series of disasters. The original hut of Numa where the sacred fire was kept burning was destroyed

¹ H. Walker, M.A., *The Cambridge Modern History*, vol. xi, chap. xiii. (Cambridge, 1909).

^{2a} W. M. Flinders Petrie, *Ten Years' Digging in Egypt, 1881-1891*. (London, 1893.) (Centuries after the Pharaohs the Russians achieved the same result in a more subtle manner when on a fountain erected in Coblenz by the French to commemorate their Russian campaign

of 1812 the Russian Commander, S. Priest, added "Vu et approuvé par nous Commandant Russe de la Ville de Coblenz, le 1^{er} Janvier 1814.")

^{2b} James Fergusson, D.C.L., F.R.S., *A History of Architecture in all Countries*, vol. i. (London, 1893.)

³ William J. Anderson and R. Phené Spiers, F.S.A., *The Architecture of Greece and Rome*. (London, 1902.)

by the Gauls in 390 B.C. A second and third fire destroyed its successors in 241 and 210 B.C.⁴ The tradition, however, which prevailed in the first years of the Christian era, and which was, no doubt, in substance correct, is narrated by Ovid: "The shrines which you now see roofed with brass, then you might see covered with straw, and their walls were woven of the pliant osier. This little spot, which now supports the hall of Vesta, was in those days the vast palace of the unshorn Numa. Yet the shape of the temple which now remains is said to have been anciently the same."⁵ Later this temple was restored by Nero (55-68 A.D.), after his fire, and rebuilt by Julia Domna, the wife of Septimus Severus (193-211), after that of 191 A.D.⁶ Such, briefly, is the history of the most sacred building of the Romans. Other buildings did not fare perhaps so well, owing to their less sacred and antique character, though many were restored and rebuilt. "Fair Concord . . . now have the august hands of Cæsar replaced thee,"⁷ refers to a second reconstruction of the temple in 10 A.D. by Tiberius; the first, which, for political reasons, was the cause of great dissatisfaction to the plebeians, was in 121 B.C. The more settled and luxurious times that came in with the Empire showed themselves in extensive rebuildings. Augustus found Rome brick and left it marble. "Under him the temples feel not the ravages of time; it is not enough to grant favours to us mortals, he lays the very gods under obligations to him. Thou builder of the temples, thou holy restorer of our shrines!" Thus Ovid of his patron.⁸ Other Emperors cared for the monuments that serve for the decoration of a great country as they had leisure from the defence of the empire or of their own imperial power. Vespasian received the title of "Restitutor Aedium Sacrarum." Hadrian repaired theatres and basilicas and rebuilt temples. Medals struck in his honour call him the restorer, the benefactor of the cities visited in his travels. Amongst other works, he restored the tomb of Ajax at Troy, and completed the Temple of Jupiter Olympus at Athens nearly three hundred years after its commencement in 174 B.C. by Antiochus Epiphanes. The destruction of practically all the buildings of a date anterior to the reign of Augustus makes the knowledge of them uncertain and difficult to obtain. Such knowledge as is obtainable is derived from the writings of various writers, bas-reliefs, coins, and the scanty remains afforded by excavations of sites built over many times. The history of the Temple of Vesta probably represents the story of the reconstruction of other Roman buildings: rebuilding on the lines of the previous buildings, with such alterations in material and construction that the luxury of the times or science suggested, or contemporary art required, and with additions that were found necessary or convenient. A similar history⁹ belongs to the Temple of Jupiter Capitolinus, the national sanctuary of Ancient Rome. The original building, designed by the elder Tarquin and built by his son Superbus, was pure Etruscan, with wide intercolumniations necessitating wooden architraves. This temple lasted from 509 B.C. till 83 B.C., when it was burnt by a malefactor. Sulla commenced to rebuild it, employing some of the columns of Jupiter Olympus at Athens, and it was finished by Julius Cæsar. Augustus restored it in 9 B.C. Vespasian, in 74 A.D., after it had been again burnt, rebuilt it, increasing it in height. Ten years later it was again burnt, and rebuilt this time by Domitian with increased splendour and with Corinthian columns of Pentelic marble. At some time in its history it is supposed to have been increased from a tetrastyle temple to a hexastyle by the addition of a peristyle, though Lanciani says that Domitian's temple was the same length and width as its predecessors.

2 (iv.) Art had sunk so low by the time of Constantine that he was unable to find sufficient architects to build the public buildings of his new capital,² and for want of sculptors of adequate ability had even to rob a triumphal arch of Trajan of bas-reliefs and statues, and other public and private monuments of marble to build himself the arch commemorating his

⁴ Rodolfo Lanciani, *The Ruins and Excavations of* (London, 1903.)
Ancient Rome. (London, 1897.)

⁶ Norwood Young, *The Story of Rome.* (London, 1901.)

⁸ Ovid, *Fasti*, translated by Henry T. Riley, M.A.

⁷ Gibbon, *Decline and Fall of the Roman Empire.* L.

victory over Maxentius.² Constantinople he adorned with trophies and statues despoiled from the cities of Greece and Asia, and even Rome herself.³ From this period may be dated the beginning of centuries of destruction and spoliation, unrelieved in Rome by the creation of any new works of genius. During the Augustan era and the years following practically all previous monuments had been pulled down or destroyed from some cause or another, only to be rebuilt more splendidly, but from now classic remains fell with ever-increasing rapidity into ruin. The few exceptions that remain, owing principally to their use as Christian churches, only intensify the general ruin. It would be tedious to follow step by step this wholesale destruction; to indicate the general causes of it will be sufficient. The first and worst is human agency, friend and foe, the former, if anything, being the more injurious. Injury was caused by robbing the buildings of their metal cramps and tiles, and by burning the marble for lime. The Emperor Majorianus found it necessary to issue an edict as early as 457⁴ against the use of material necessary for public works and taken from public buildings being converted, with the connivance of the judges, to private use, so "that the great is destroyed to erect the little." The invasion of the Barbarians was the source of great loss. Alaric in 410 and Genseric in 455 carried off great spoils of gold and silver ornaments and valuables from the temples, statues, and gilt-bronze tiles; Alaric destroying the gardens and palace of Sallust, and Genseric stripping the bronze roof of Jupiter Capitolinus. More damage still was done by the Goths in the next century, and by the inhabitants of Rome in defence. The walls were repaired by material torn from the buildings round, and the statues from the Mausoleum of Hadrian were hurled down on the heads of the assailants. It must not, however, be thought the Barbarians were unenlightened savages; on the contrary, much of the spoil taken by them consisted of statues to adorn their own palaces. So much were artistic treasures appreciated by some of them that Theodoric the Great appointed a "professed architect,"⁵ and allotted a sum of money to repair the walls and public buildings, and by royal edicts attempted to prevent the depredations of the citizens themselves. The second cause of ruin continued the destruction that man only had rendered possible. Sun, wind, rain and frost, assisted by frequent inundations from the Tiber, and by less frequent but more destructive earthquakes, now for centuries worked their will on buildings that had lost their protective coverings and strengthening ties, reducing the once centre of the world to a mass of ruins. The world-wide empire is split up into separate entities, and it would be beyond the limits of this Paper to follow the treatment meted out to artistic treasures by each separate race. The consideration of the course pursued in England will serve as an illustration of what took place with modifications in other nations.

2 (v.) The tremendous energy prevailing during the Middle Ages found in building one source of outlet. They pulled down and rebuilt in rivalry one monastery with another, one town with another, clergy with burghers, and merchant with merchant. On grounds which nowadays would only be considered sufficient to necessitate at the most a complete reparation, they undertook extensive rebuilding schemes. Much more would have been done but for the want of building material and lack of labour. To these reasons is probably due the preservation of much old work that logically should have been cleared away when alterations and enlargements were carried out. No incongruity was felt in the destruction of Edward the Confessor's darling work at Westminster in order to erect a shrine to his memory. In all cases the rebuilding was in the style prevailing at that particular period, and only in a few exceptional cases, as in the nave and cloisters of Westminster Abbey, was any attempt made by copying to harmonise the new work with the old. Wanton destruction without replacement occurred occasionally as the Middle Ages drew onwards; Winchester Cathedral was shortened 40 feet, and its two great western towers pulled down, Gloucester and St. Albans also losing

² Rodolfo Lanciani, *Ancient Rome in the Light of Recent Discoveries*. (London, 1886?)

theirs. The casing of the Norman work at Winchester and Gloucester may be considered as instances where the change in the tastes of the times caused alterations to existing work. The lack of esteem for their predecessors' work must not be judged by the standard of modern reverence for mediæval work. It must be remembered that the spirit of the age of the late mediævalists was much closer to the early than that of the present age is to late Georgian, or late Georgian to the Middle Ages.

2 (vi.) Owing to its insular position England has been comparatively free from foreign invasion, what damage was caused by war being done during civil strifes. The wars of Stephen's reign caused great devastation. "You might have journeyed a whole day without seeing a living person in the towns, or in the country one field in a state of tillage."⁹ The barons were allowed to build castles from which they preyed on the countryside to such an extent that in the next reign Henry found it necessary to destroy, it is said, over a hundred of these strongholds. On the other hand, the Wars of the Roses were confined to the great lords, and "England presented to Philippe de Commines the rare spectacle of a land where, brutal as was the strife, 'there are no buildings destroyed or demolished by war, and where the mischief falls, if it falls, on those who make the war.'"¹⁰ Warfare with Scotland was productive of great loss along both sides of the Border. The record of one town, Jedburgh, will show the vicissitudes that occurred in a more or less degree, according to their strength, in most of the towns situated there: abbey wrecked and plundered by Sir Richard Hastings, 1279; castle taken by the English, 1346; retaken by the Scots and razed to the ground, 1409; town burnt by Sir Robert Umfraville, 1410 and 1416, and by the Earl of Warwick, 1464; town and abbey attacked, pillaged, and burnt by the Earl of Surrey, 1523; abbey repaired, 1541-1544; abbey pillaged and burnt by Sir Ralph Eure, 1544, and by the Earl of Hertford, 1545.^{11, 12}

2 (vii.) A similar attitude towards old work as was the vogue in mediæval times was maintained until the Renaissance became decadent. Architects, who had now begun to separate themselves from workmen, designed in their contemporary style additions to mediæval buildings, just as the fifteenth-century masons had built them to earlier buildings. The introduction of gunpowder and the more settled condition of the nation caused, after the Wars of the Roses, the gradual abandonment of the non-residential parts of many castles, which fell into disrepair, and finally into ruin. The same fate through disuse overtook the monastic establishments on the dissolution of the monasteries (1536-9), and also overtook over two thousand chantries and chapels and a hundred and ten hospitals on their suppression in 1545.¹³ Many of the churches were retained in use, and other parts of the establishments were turned into dwelling-houses or employed for other purposes by those into whose possession they came. While the remainder fell into ruin or were destroyed, numerous domestic buildings began to rise, built by the new aristocracy from the wealth thus dispersed. All who could afford it built houses for themselves during this century and the beginning of the next. "When the condition of an existing house did not warrant its actual removal, additions in the new style were made; something had to be done to keep in fashion. . . . The builders of Elizabeth's days removed work of their grandfathers to make room for their own, only to have this, in its turn, replaced in the times of Anne and the Georges."¹⁴ Churches, except in growing towns or where, as in London, fire had destroyed them, were sufficient for the needs of the population. The work was confined to maintaining them in use, and where

⁹ *Anglo-Saxon Chronicle.*

¹⁰ J. R. Green, M.A., *A Short History of the English People.* (London, 1902.)

¹¹ MacGibbon and Ross, *Ecclesiastical Architecture of Scotland.* (Edinburgh, 1896.)

¹² James Watson, *Jedburgh Abbey.* (Second edition, Edinburgh, 1894.)

¹³ J. Alfred Gotch, F.S.A., *Early Renaissance Architecture in England.* (London, 1901.)

new furniture or a small addition was required it was made in the manner then prevalent. The fact that down to the middle of the eighteenth century these additions to buildings often show more or less Gothic features in the stonework does not indicate a striving after a style dead and gone. The Gothic tradition lingered long amongst country masons, existing side by side with a childlike and naive knowledge of classic features obtained from pattern-books, and this though carpenters, joiners, and plasterers had quite adopted Renaissance detail. The spire and part of the tower at Higham Ferrers, which fell in 1631, was rebuilt to the old design,¹⁴ no doubt through this lingering tradition, but possibly in order to re-use the old material which was largely employed in the rebuilding.

2 (viii.) Destruction had its way during the Renaissance as in Classic and Mediæval times. In 1560 it was found necessary to issue a proclamation against breaking and defacing monuments of antiquity set up in churches, and converting church bells to private uses,¹⁵ a proclamation inspired not so much by a reverence for the past as by the desire for the maintenance of order and decency. Damage was caused to abbeys and priories such as St. Albans, Glastonbury, and Romsey, by the search for treasure allowed by licences granted by James I.¹⁶ The Puritans and the Civil War were answerable for a great deal of injury; the religious prejudices of the former causing much loss of stained glass and statuary, though by no means all that is attributed to them.

2 (ix.) Though work was thus done in the contemporary manner, Wren—for reasons he has not explained—occasionally designed in the Gothic style. The best-known example is the two western towers of Westminster Abbey, finished by Hawksmoor, and perhaps the most successful, the gateway at Christchurch, Oxford. The reason that St. Mary, Aldermanbury, was rebuilt in the Gothic was the fact that 5,000*l.* was left by Henry Rogers conditionally on the church being a copy of the old,¹⁷ an early example of a custom in vogue at the present time. Other London examples are the towers of St. Dunstan's in the East, and St. Michael's, Cornhill, the latter possibly being intended as a reminiscence of the departed glories of the old tower that was burnt. Whether Wren made all these designs from pressure or as academical studies is unknown.¹⁸ The designs are vigorous and in good proportion, but lacking in sympathy with Gothic architecture, and the details are puerile, and where not actually Classic have a decided Classic feeling. Wren's proposals for dealing with Chichester Cathedral were drastic, including, as they did, the removal of the ruins of the north-west tower, the taking down of the south-west tower, the pulling down of one bay of the nave, and the building of a new front. Fortunately his suggestions were not carried out. His lack of reverence for an ancient building will be remembered by all those who know his Classic work at the Tower of London, or the history of Hampton Court Palace.

2 (x.) It will now be apparent that the treatment of buildings in the past has been much the same at different periods. The reasons for the treatment may have varied; the results have been much the same. Generally speaking, man has used them for his own convenience, adapting, altering, rebuilding, and destroying them as it suited him, building up, it is true, history in stone for the wise to read, but thoughtless and regardless of the ages coming after him when the masterpieces of those times would be impossible of creation.

3 (i.) With the Renaissance men broke away from the old traditions of the schoolmen, with their narrow thoughts and arguments on abstract principles, and began that critical investigation on which all true science is based. "For the first time men opened their eyes and saw."¹⁹ Dante (1265-1321) stands on the borderland between the old and new. A new

¹⁴ Reginald Blomfield, A.R.A., *A History of the Renaissance Architecture in England*, vol. i. (London, 1897.)

¹⁵ George H. Birch, F.S.A., *London Churches of the*

Seventeenth and Eighteenth Centuries. (London, 1896.)

¹⁶ M. Taine

epoch begins with his writings, though his theology and philosophy are those of the Middle Ages. Petrarch (1304-1374), separated from Dante by a greater distance than represented by the distance of time, forsook the philosophy of the schoolmen for Cicero and Virgil. His letters form an encyclopædic manual on history, archaeology, and philosophy, written perhaps more for the exhibition of literary style than to communicate great knowledge to which the new culture was too young to have attained. He sought out the manuscripts of unknown and forgotten authors, and made a small collection of coins, but beyond showing the direction of the new tendencies his contribution to science is of little or no value. To his friend, Cola di Rienzo (1313-1354), more famous for the temporary success of his teaching based on his reading of ancient Roman inscriptions than for the accuracy with which he translated them,⁷ the world is indebted for the very first collection of Latin epitaphs compiled according to the principles of modern science.⁸ The great literary movement was arrested at the death of Petrarch, while the revival of learning began to gather way, led by the Humanists, more philologists than archaeologists. An insatiable curiosity influenced every branch of activity; men pushed off into unknown oceans, terrestrial, celestial, archaeological, seeking but not knowing what they would find. The knowledge thus acquired was spread by the newly invented printing press. Oliviero Forza of Treviso, a predecessor of Petrarch in numismatical leanings, must be considered "one of the first promoters of the new tendencies, and of the new artistic and archaeological tastes."⁹ Impetus was given to the desire for the new learning by the foundation of a Greek professorship in Florence in 1396. The first *literati* in Florence flocked to study under Emanuele Crisolora, the first professor. Material was being accumulated for a fresh literary advance. Medals, manuscripts, and inscriptions were diligently sought for, collected and copied. Niccolò Niccoli (1364-1437) left a collection of eight hundred codices, which formed, at his death, the first public library in Europe.¹⁷ Poggio Bracciolini (1380-?), another Florentine, has left interesting records of his collection of ancient marbles, amongst which, in a delightful villa, he would sit composing foul and scurrilous invectives. In the last years of his life he wrote a *History of Florence* in imitation of Livy. Though he lost thereby the narrative style of the old chronicles, he was compelled to link his facts together in a literary, if not a scientific manner.¹⁷ With Poggio and Leonardo Bruni (1369-1444) passes the old chronicle and commences the modern history. The latter has the honour of being the first to apply the critical faculty to fables that till then passed current as historical truths, besides being in some respects a true precursor of modern philology. In the work of Flavio Biondo (1388-1463) on the decline of the Roman Empire, history becomes a science, and historic criticism is used to distinguish contemporary narrators from those of a later date. He also made the first serious attempt at a complete topography of Rome in a description of its pagan and Christian monuments, entitled *Roma Instaurata*.¹⁷ While these histories are dull affairs, full of magnified skirmishes and grandiloquent speeches, with neither local colour nor anecdotes, they mark the commencement of critical research, which gradually became of increasing importance, and they paved the way for Guicciardini, Machiavelli, and the host of others from them to the present day. Progress would have been greater but for the restraining power of the Church. The propagation of new ideas or the criticism of old was often risky and dangerous. Lorenzo Valla (1406-1547), who attacked the Donation of Constantine, was summoned before the Inquisition in Naples, and all will recall the names of Galileo and Giordano Bruno in the next century.

3 (ii.) As early as the fifth century, as has been described, Classic remains were quarried for building material, their marbles were burnt for lime, the metal cramps were wrenched out of the walls, and the roofs stripped of their bronze tiles. This destruction

¹⁷ Pasquale Villari, *The Life and Times of Machiavelli*. (London, 1878.)

continued through the Middle Ages, justified by the superstition of the times against pagan edifices. Such superstition, however, did not prevent convenient buildings being consecrated as places of Christian worship. Their use formed their best protection. The Pantheon is now the Church of the Blessed Virgin, and Lanciani³ names a dozen buildings out of many more that were preserved as churches. The use of other remains by noble families as fortresses has also tended to preserve them from destruction. The Savelli fortified the Theatre of Marcellus; the Frangipani used the Colosseum, the Arches of Titus and Constantine, and the Temple of Janus of the Forum Boarium as outworks for their central fortress in the palace of the Cæsars; while the Colonnas were masters of the Mausoleum of Augustus and the Temple of the Sun on the Quirinal. The profane use to which the monuments of antiquity were put, whether as fortified homes for the nobles, quarries for building material, shelters for the poor, or dens for robbers, must have influenced greatly the regard and esteem in which they were held at the time of the Renaissance. In spite of the growth of archaeological research and of an extravagant admiration for ancient art and classic civilisation, it was impossible to eradicate the lack of reverence for the ruins of a glorious past. The growth of more luxurious times and softer manners with increasing civilisation necessitated more magnificent palaces and villas, larger churches, broader streets, aqueducts, fountains, and bridges, which were all made at the expense of ancient buildings. The apostolic treasury would sell a ruin as a quarry, taking 33 per cent. of the value of the spoil. The first official record of this dates from 1364, when Urban V. (1362-1370), during the "Babylonian Captivity," sold the materials of the Temple of Antoninus and Faustina, other than the part used as a church, to the rebuilders of the Lateran.⁴ In 1431-1462 the great travertine wall separating the Senate House from the Forum Julium was thus destroyed.⁴ The Temple of Venus at Rome shared a like fate in 1450.⁴ In one year (1452) two thousand five hundred and twenty-two cartloads of travertine were removed from the Colosseum.⁵ The Temple of the Sacra Urbs in 1461-1462, and the House of the Vestals in 1499, were swept away.⁴ In the expressive phrase of Pietro Ligorio, "ruins were sold like oxen for the meat market," a sentiment which did not prevent him discovering that no better lime was to be made than that from "the powder of those statues which are destroyed every day."¹⁸ With Paul III. (1534-1550), who as Cardinal had already commenced the Palazzo Farnese with materials torn from the Temple of the Sun, the Baths of Caracalla, and other ancient buildings, began still greater devastation. Between 1540 and 1549 the contractors employed to gather material for St. Peter's crossed the valley of the Forum from end to end, like, as Lanciani puts it, "an appalling meteor destroying, dismantling, splitting into fragments, burning into lime the temples, the arches, the basilicas, most famous in Roman history."¹⁹ Except for a few columns of cottanello, of all the marbles used in St. Peter's until the nineteenth century not an atom was virgin stone.⁸ It is a curious illustration of the contrariness of mind at this epoch with regard to archaeological matters that the Pope's Commissario degli Scavi was employed by him both to destroy ancient buildings for material to build his Palazzo Farnese and to collect antiques for the collection within its walls.¹⁹

3 (iii.) The awakening which in the world of letters had given so much encouragement to the study of the past had not prevented the destruction just described. Architects were no better respecters of ancient remains than the opulent clerics and laymen. In art the Revival carries the mind back to Giotto, Orgagna, and Niccolò Pisano. As the movement became more classical, architects turned to the study of Roman remains. Filippo Brunelleschi (1377-1446) in 1403 set out from Florence with Donatello (1386-1466) to measure and sketch the monuments of Rome. Similar architectural sketches made by the Sangalli, Peruzzi, Raphael,

¹⁸ E. Rodocanachi, *Rome au Temps de Jules II et de Léon X.* (Paris and London, 1911?)

¹⁹ Rodolfo Lanciani, *The Golden Days of the Renaissance in Rome.* (London, 1906.)

Alberti, Bramante, Sansovino and others are preserved in the Uffizi Gallery in Florence—sketches which in modern times have helped to solve many topographical riddles.⁸ Though they sketched, measured, and studied even the obscurest fragments until they had obtained all the advantage they thought they were capable of affording, they joined in the work of destroying those remains of an art they admired so much. Michael Angelo cut the pedestal for the statue of Marcus Aurelius from one of the columns of the Temple of Castor and Pollux, and the coat-of-arms of Pius IV. on the top of the Porta Pia from a marble capital of colossal size discovered under the palace of Piero della Valle.⁹ Raphael himself, with Lorenzetto, used another fragment of the columns of the Temple of Castor and Pollux for the statue of Jonah in the Chigi Chapel of Sta. Maria del Popolo. Bramante swept away the whole of the old Basilica of St. Peter's, with innumerable tombs and memorials of all ages, and amongst many pagan remains the so-called "Meta" of Romulus in the Borgo.¹⁰ While architects were measuring and sketching the ancient monuments and re-using their remains in their own work, and the popes, cardinals, patricians, bankers, and rich merchants were collecting everything that appealed to them of an æsthetic value, and destroying everything else, only objects of a definite artistic or historical character had a chance of survival. Protests were raised from time to time. As far back as 1363 the city statutes of Rome had forbidden, under heavy penalties, the defacing of the vestiges of ancient Rome, "the honour and embellishment of the city."¹¹ Aeneas Silvius Piccolomini, Pius II. (1458-1464), and Sixtus IV. (1471-1484) attempted to stay the destruction. Leo X. (1513-1522), in appointing Raphael architect to St. Peter's (August 1514), authorised that the discovery of any ancient edifice should be notified to Raphael within three days, as "great quantities of stone and marble are frequently discovered with inscriptions or curious monumental devices which are deserving of preservation for the promotion of literature, and the cultivation of the Latin tongue; but are frequently cut and broken and the inscriptions obliterated, for the sake of using them as materials in new buildings."¹² One is rather in doubt whether the laudable desire for the cultivation of the Latin tongue, or the wish to be earliest at the latest quarry for marble for his new church, weighed most with the reverend father. However this may be, Raphael was soon after commissioned by Leo to make a survey of Rome showing the ancient edifices. He appears to have commenced this shortly before his death, drawing up a memorandum addressed to the Pope, and making sketches, many of which found their way to England. This memorandum, besides confirming what has already been said concerning the great destruction that had been carried on in the past, shows that although Raphael was not prepared to take the measures for the preservation of ancient monuments that thinking people of to-day are, yet he appreciated the immense importance of the works that had escaped the "corroding file and consuming tooth of Time, envious of the glory of mortals, the destructive fury of the profane and unsparing barbarians, and fire, sword, and every other mode of devastation."¹³ These views are the more remarkable as Bramante, his benefactor, if not his uncle, was the worst offender, acquiring through his depredations the nickname of "Il Ruinante."¹⁴ Raphael's scheme of survey was on such sound lines that three and a half centuries later it was adopted practically without alteration by the Berlin Academy of Sciences and by the Accademia Reale dei Lincei of Rome.¹⁵ The report was pigeon-holed, and the work of destruction, as has already been described, continued until with the Napoleonic era the first move in the present direction began.

3 (iv.) In England the Revival of Learning took a different tone from that in Italy, having a greater effect on religion and politics. Dean Colet (1466-1519), the founder of St. Paul's School, and Erasmus (1467-1536) (who had already previously visited Oxford in

⁸ William Roscoe, *The Life and Pontificate of Leo X.* Fifth Edition. (London, 1846.)

¹¹ From Raphael's Memorandum as translated by Roscoe.

1498, as the only place this side of the Alps where, under Grocyn, Greek was taught),¹⁰ were the leaders of its religious and moral tendencies. Sir Thomas More (1480-1535), with his *Utopia*, opened men's minds to social and political problems. It was not, however, until Elizabeth's reign that the new learning began, through numerous translators, to influence the mass of the people. A new interest in the past commenced to spread, which led to the collection of its annals. John Leland, the librarian to Henry VIII., had, with a commission from the King, examined all the libraries of the cathedrals, abbeys and colleges in the kingdom, and had collected materials for a history of England and Wales. After his death in 1522 his manuscripts eventually passed into the Bodleian Library. Following in his steps, Archbishop Parker (1504-1575) made a collection of manuscripts which he rescued from the wreck of the monastic libraries. He published many of these, wrote *De Antiquitate Britannicae Ecclesiae*, and in 1572, with Camden, Stowe, and others, formed a society of antiquaries.²² About this time the writing of history became more literary with the appearance of the poet Daniel's (1562-1619) inaccurate and superficial History of England. The custom of writing simple records such as John Speed's (1555-1629) and John Stowe's (c.1525-1605) without arrangement or style was abandoned. The wider national outlook that sent Drake round the world manifested itself in learning in Richard Knolles' works on the Turks, and Raleigh's attempt at the History of the World. A greater name in literature than any of these had already made itself felt when in 1605 Francis Bacon, at the age of forty-four, published *The Advancement of Learning*, the first determined step towards what was afterwards known as the new philosophy. Though it may have been that some contemporaries (1620) considered that "the Lord Chancellor wrote on science like a Lord Chancellor,"²³ the voice of later ages almost without exception has attributed to his *Novum Organum* a decisive influence on modern science. While previous to the appearance of his works those who attempted to improve the conditions of human existence were looked upon by the ancient philosophers as mechanics, and by the schoolmen as conjurers who should be burnt, Bacon gave dignity to slow and patient investigation, to the neglect of theory for fact, and to the struggle after the truth, which is the foundation of modern knowledge.

3 (v.) One attempt at the solution of an archaeological problem must be mentioned on account of the eminence of its author, Inigo Jones (1573-1652), and to illustrate the knowledge of the age which rendered its publication possible. Although challenged at once on its appearance (1655) by Dr. Charlton, Webb chivalrously vindicated (1665) the theory of his late master (or more probably that of Jones' patron, King James) that Stonehenge was a Roman Tuscan temple.²⁴ There was no real archaeological study in England. Classic examples were studied solely for the purpose of an architect's practice, from books written by Italians. Travelling and the grand tour were undertaken, as a rule, only by the sons of the aristocracy. Wren never went further than France. Inigo Jones, however, twice visited Italy, where he applied himself "to search the ruins of those ancient buildings which, in despite of time itself and the violence of barbarians, are yet remaining," and "to converse with the great masters."²⁵ Besides study, he was employed on his second journey to Italy by his patron, the Earl of Arundel, the Earl of Pembroke, and Lord Danvers to collect works of art.¹⁴ Thomas Howard, Earl of Arundel, after the manner of a Roman nobleman of the period, kept his agents in Italy and Greece collecting valuable objects of the ancient world. The larger part, now known as the Arundelian marbles, are in possession of the University at Oxford. Other architects, such as John Shute and Charles Williams, who went to Italy did not make as good use of

²² Haydn's *Dictionary of Dates*. (London, 1895.)

²³ William Harvey. (1578-1657.)

²⁴ Triggs and Tanner, *Some Architectural Works of*

Inigo Jones. (London, 1901.)

²⁵ Inigo Jones, *Stonehenge Restored*. (1725.) Biographical sketch prefixed to,

their opportunities as did Inigo Jones, whose work though was confined more to professional interests than to archæological research.^{25a}

3 (vi.) The societies of learned men, one of which, as already mentioned, had originated under Archbishop Parker, have greatly assisted and encouraged the advancement of learning. Bacon promoted the idea in his *New Atlantis*, where he sketches a model of a college of thinkers. William Gilbert (1540-1603) and William Harvey (1578-1657) formed social assemblies of eminent men; while from 1645, when Dr. Wilkins, Dr. Wallis, and other distinguished men met in London at Gresham College, the succession of such meetings, crystallising into the Royal Society in 1662, remains unbroken at the present day.²⁶ The foundation of this society exemplifies the age's tendency of thought, which was diverging from channels of adventure to those of research. The beginning of the eighteenth century marked the formation of the Society of Antiquaries (1707), and later, in 1734, the Society of Dilettanti was established by several noblemen, both fostering and encouraging the growing interest in the past. The former society devoted itself to the study of objects of antiquarian interest at home, and the Dilettanti to the discovery and study of Greek plastic art. With the Society of Antiquaries, which had published copies of numbers of scarce old topographical prints, commenced (1770) the yearly series of papers published under the general title of *Archæologia*. The Society of Dilettanti assisted in the publication of Stuart and Revett's *Antiquities of Athens* (1762-1815). The painter, James Stuart, and the architect, Nicolas Revett, had spent three years from 1751 at Athens making carefully measured drawings of its architecture and sculpture. The first volume of their epoch-making book appeared in 1762. Two years later the same society sent out the "Ionic" expedition, at their own expense, and published the results (1769).

3 (vii.) This period, the beginning of English archæological study under a modern aspect, is marked by the appearance on the Continent of the first History of Art. Winckelmann (1718-1768), though obviously looking at Greek art through Roman spectacles, long remained the authority of all knowledge and criticism of classic art. He had been able to see Greek work at reopened Herculaneum (1738), and had visited Paestum, but his chief study was the collections in the Vatican. The widespread interest in past art roused by this and the publications of the Society of Dilettanti was confined to classic remains. Englishmen, fired by admiration these works engendered, continued the practice already in vogue in the times of Inigo Jones, of forming collections of classic sculpture and architectural fragments; now with greater knowledge, but still irrespective of the desirability of their remaining *in situ*. Lord Elgin, appointed Ambassador to Turkey at the close of the eighteenth century, used the opportunities thus given him to form a vast collection, which, in spite of Byron's satire, *The Curse of Minerva*, was eventually bought by the Government and deposited in the British Museum. Posterity has exonerated him from the mercenary motives of which Byron in his heat accuses him. There is no doubt that Lord Elgin's agent did not always use the gentlest methods in dealing with the removal of the sculptures from the Parthenon, and though it is no justification for their removal to say they would have been damaged further, or even destroyed by the two bombardments twenty years later²⁷—the future being hidden from all—Lord Elgin was in the position to realise the risk they ran in that unhappy and unsettled country ruled by an ignorant and alien race. By their removal and by their exhibition in an accessible place an incalculable benefit has been conferred on the world of art. In the present age, with its more settled conditions in Greece and its facilities for travel, such a removal would be an unjustifiable outrage, and against which the Greeks have long ago protected themselves by

^{25a} J. Alfred Gotch, F.S.A., F.R.I.B.A., *The Growth of Life*, vol. xxxii., 1912).

the English House. (London, 1909.)

²⁷ Michaelis, *A Century of Archaeological Research*.

²⁶ Henry B. Wheatley, *The Royal Society (Country*

legislation. Down to the later part of the last century the museums of Europe were continually enriched by works of art from the Turkish possessions. By greater enterprise the British Museum grew more rapidly than those of Paris, Berlin and Munich. From Egypt, primarily due to Napoleon's desire to pose as a protector of learning combined with the fortunes of war; from Athens, as has already been shown; from Assyria, Phigaleia, Lycia, and Halicarnassus, untold riches were poured into its galleries by Elgin, Layard, Fellows, Newton, and Wood.

4 (i.) The period which saw the birth of modern English archaeological research was big with change in other directions. While a few faddists indulged themselves with Strawberry Hill Gothic, and churchwardens with the form of it peculiar to their species, the self-complacent practitioner of "elegant" and "genteel" architecture followed the fashion of the times, first Italian, and then Greek. To the want of congruity was added the lack of historic accuracy, Chambers advising "strictly copying such things as appeared to be perfect and carefully correcting others which seemed in any degree faulty." The mediæval remains of the past were despised by the majority. In spite of repeated warnings in the *Gentleman's Magazine* of their destruction, a large number of the churches fell into a state of neglect and disrepair. The tendencies of the age, with its frivolous love for novelty in art, Roman, Greek, Bastard-Gothic, or even Chinese, show themselves in the growth of the new Romantic school. A love for the picturesque grew up, encouraged by a reaction against the dry forms and husks of the classic architecture of that day. As illustrating this feeling in certain circles which were breaking with the classic tradition, the following description from *An Essay on British Cottage Architecture*,²⁸ written towards the close of the eighteenth century, will bear quotation: "I figure in my imagination a small house, of odd, irregular form, with various harmonious colouring, the effects of weather, time, and accident, the whole environed with smiling verdure, having a contented, cheerful, inviting aspect, and a door open to receive a gossip neighbour, or weary, exhausted traveller. There are many indescribable somethings that must necessarily combine to give to a dwelling this distinguished character. A porch at entrance; irregular breaks in the direction of the walls, one part higher than the other; various roofing of different materials, thatch particularly boldly projecting; fronts partly built of brick, partly weather-boarded, and partly brick-nogging dashed; casement window-lights, are all conducive and constitute its features." The drawings of Samuel Prout (1783-1852), called the discoverer of the picturesque in old cottages and domestic architecture, contributed largely in the same direction. From the love of the picturesque to an interest in Gothic was but a short step with the imagination excited by descriptions of such "sad" and "fair" scenes as Melrose Abbey,²⁹

"When the broken arches are black in night,
And each shafted oriel glimmers white;
When the cold light's uncertain shower
Streams on the ruin'd central tower;
When buttress and buttress, alternately,
Seem framed of ebon and ivory."

Horace Walpole had written *The Castle of Otranto* and Gothicised Strawberry Hill; Sir Walter Scott wrote *The Lay of the Last Minstrel*, and built Abbotsford. At the same time, the national outlook was narrowed by the French Wars of the Revolution to a large extent cutting off the inhabitants of these isles from the Continent, and "England was thrown violently back on herself."³⁰ Men began seriously to turn their minds to the study of mediævalism. Coming at the time of a revived activity in religious affairs which had originated with the Evangelical movement, and finding the churches in a woeful state of neglect, this interest in the Middle Ages led architects to attempt a more harmonious treatment of the

²⁸ James Malton, *An Essay on British Cottage Architecture*. (1798.)

²⁹ Sir Walter Scott, *The Lay of the Last Minstrel*. (1805.)

³⁰ Lisle March Phillipps, *The Works of Man*. (London, 1911.)

buildings entrusted to them. The knowledge of Gothic was small, and the results deplorable. However, men were at work studying Gothic architecture, and the first quarter of the nineteenth century saw numerous works published by such men as Augustus Pugin (1762-1832), John Britton (1771-1851), Thomas Rickman (1776-1841), and others.²¹

4 (ii.) With increased knowledge began attempts to reconstruct the past. The start of the Oxford movement (1833) gave fresh energy to mediævalism. Clergymen and architects were bitten with a desire to bring the churches entrusted to them into accord with mediæval appearance, both as to architecture and ritual. Research, often painstaking, was undertaken to discover the original design of the church—and then it was restored in accordance with their ideas of what it had been, everything posterior to the date of its origin being swept away. The great historical movement of this time, headed by Niebuhr, Böckh and Leopold von Ranke in Germany, Michelet and Guizot in France, and Hallam in England, was having its influence upon the educated classes. Architects wished to take part in the movement, and to build in stone the results of their study. "To analyse the past, to compare and classify its phenomena, and to construct its veritable history by following step by step the march, the progress, the successive phases of humanity,"²² would be excellent motives to guide one if confined to literature or to drawings such as are made by the *pensionnaires* of the Academy of France at Rome. When the attempt is extended to buildings the result is only better than Earl's Court by being in more substantial material, though some may consider this made the result worse. It must not be forgotten that numberless churches were in such a ruinous state, owing to the shocking neglect during the previous three centuries, that some kind of reparation had to be undertaken to bring them into accord with newer ideas of decency of worship. If history were destroyed in so doing—by the sweeping away of many relics of the past, such as Jacobean altar-tables and screens, and Georgian galleries, high-back pews, and three-deckers—history was being written by the very act. The loss to art by the destruction of so many artistic treasures, both Mediæval and Renaissance, that can never be replaced was, however, too high a price to pay. It was not long before those interested in their preservation began to raise protests at the destruction of material for the study of art and history. Architects were accused of selecting some favourite period of Gothic, usually the thirteenth and fourteenth centuries, and making the church they had under restoration fit the style, or of working in some choice morsel from Bloxham or the Glossary.²³ The clergy were not a whit behind the architects in their blind zeal in these matters; the Rev. J. M. Neale being ready "to see Peterborough Cathedral pulled down if it could be replaced by a Middle-Pointed (Decorated) Cathedral as good of its sort . . . He himself, could he know that a better style than Middle-Pointed was discovered, would destroy every Middle-Pointed building."²⁴ He must have belonged to the Destructive School; the advocates of restoration being now classified as Destructive, Conservative, and Eclectic.

4 (iii.) In protesting against such treatment of historic buildings, Sir Gilbert Scott (1811-1878) could well place himself among the prophets, but it makes curious reading nowadays to find him pluming himself on not wishing to remove the late erection from the central arch of Peterborough Cathedral or St. Margaret's Church from beside Westminster Abbey.²⁵ He advocated what was called "Conservative" restoration. This consisted in allowing later portions of the church to remain when there was no valid reason for removing them. If the later portion was decayed and the original could be restored with certainty it was to be restored. Scott and his contemporaries limited "later portions" to before the sixteenth century, work with a taint of classicism receiving short shrift. "Even

²¹ Maurice B. Adams, *Architects from George IV. to George V.* Journal of the R.I.B.A., vol. xix. (1911-1912.)

²² E. Viollet-le-Duc, *On Restoration*. An English version of the article "Restauration" in the *Dictionnaire*

Raisonné, by Charles Wethered.

²³ George Gilbert Scott, *A Plea for the Faithful Restoration of our Ancient Churches*. (London, 1850.)

²⁴ *Ecclesiologist*, vol. vii., p. 238.

entire rebuilding," he writes, "if necessary, may be effected *conservatively*, preserving the precise forms, and often much of the actual material and details of the original; and," he adds, with the wisdom of the serpent and gentleness of the dove, "it is often better effected *by degrees*, and without a fixed determination to carry it throughout, than if commenced *all at once*."²⁵

4 (iv.) Ruskin, who headed the opposite party, took the uncompromising line that no restoration should be allowed. "*We have no right whatever to touch them. They are not ours. They belong partly to those who built them, and partly to all the generations of mankind who are to follow us.*"²⁶ They certainly belong partly to the past, but as to the future who knows whether there be any to-morrow? The present, as a tenant with a lease granted by the past, has its rights and duties to perform, on which the future will pronounce judgment. To "bind it together with iron where it loosens," to "stay it with timber where it declines," not caring "about the unsightliness of the aid"²⁷ may be a questionable way of dealing with a building that has passed out of use, but for those that are daily fulfilling their purpose, and more especially churches to which Ruskin principally referred, such a process, while dishonouring the present without reverencing the past, would deprive the future of an interesting chapter of history. Such exaggerated teaching had so little effect upon architects that a quarter of a century later Ruskin felt compelled to refuse the Royal Gold Medal of the Royal Institute of British Architects, on the ground of the continued existence of destructive restoration. His teaching, however, did not fail to bear fruit later.

4 (v.) Antiquaries continued to show more and more the importance of the historical side. The impetus the historical movement had acquired may be realised by the force which stirred the Government in 1869 to appoint a Royal Commission to catalogue and to make abstracts of papers of general public interest in the possession of institutions and private families.²⁸ The necessity for practical action for the preservation of the relics of the past was shown by the issue by the Royal Institute of British Architects in 1865 of a pamphlet entitled the "Conservation of Ancient Monuments." It was the outcome of an address by Scott before the Institute in 1862, and consisted of hints of a technical nature to workmen embodying the current views of moderate conservative restorers. The growth of feeling continued to increase. Restoration was discussed and criticised in the professional papers of the time. Sharpe protested against a proposal for the restoration of Kirkstall Abbey by Scott, picturing it as it would leave Scott's hand "with its elaborate reredos, its gilt choir-screens, its painted vaultings, its gaudy stained-glass windows, and its brilliant encaustic floor."²⁹ Four years later Street and Scott were held up at a meeting of the Royal Institute of British Architects as spoilers of churches by a former pupil of Scott,³¹ J. J. Stevenson (1832-1908), whom Scott twitted in a Paper in reply as never having restored a church, a merit which perhaps consoled him for the implied sneer. In his Paper³² Stevenson dwelt too much on the cost to history occasioned by restoration not only destroying historical records, but by forging fresh ones. He forgot that forgeries can be detected, and that, while the churches are still serving the purpose for which they were originally intended, all that was being done to them to fit them for the change in the ideas and spirit of the times would in itself be history to posterity. He referred to the loss of the picturesque through restoration, but failed to emphasise the æsthetic loss by the replacing of so much beautiful old work with lifeless copies of it or of something earlier. Illustrated by examples taken from the works of Scott and Street, these two architects con-

²⁵ John Ruskin, *The Seven Lamps of Architecture*, (Orpington, 1849.)

²⁶ First Report of the Royal Commission on Historical Manuscripts. (C. 55.) (London, 1874.)

²⁷ *The Builder*, 30th August 1873, p. 683.

²⁸ J. J. Stevenson, *Architectural Restoration, Principles and Practice*. (R.I.B.A. Sessional Papers, 1877.)

sidered the Paper as a personal attack. In replying, they both endeavoured to show that, while Stevenson looked on churches as mere records of history, they treated them as places of worship. This Paper, read at the same time as the formation (1877) of the Society for the Protection of Ancient Buildings, caused a fluttering in the architectural dovecotes. The Society which, both at this meeting and since, has had many hard things said against it, was founded by William Morris and others to protect for future generations "anything which can be looked on as artistic, picturesque, historical, antique, or substantial: any work, in short, over which educated artistic people would think it worth while to argue at all."³⁸ Its definition of objects to be protected, without a saving clause admitting of the consideration of the reasonableness of any sacrifice that might be necessitated by their protection, has been the cause of the considerable antagonism with which the Society has been met. A principle widely drawn and ridden to death opens the way to all manner of ills. The argument of the Society against restoration is that the faithful reproduction of old work is impossible, that the present age differs so widely from the past in spirit and workmanship that it cannot produce similar work. The mediæval workman knew exactly what he wanted to make, whereas the modern workman only copies from drawings something he imperfectly understands; a method which is destructive of all the charm and freedom of the old work.³⁹ The commonly accepted views at this time with regard to restoration have gradually undergone modification, as the writings of Ruskin became more widely spread and understood, and the teaching and practical example of this Society began to have an influence. From now onwards, in the same manner that excavations of dead cities were beginning to be carried out, not so much for the purpose of collecting treasures for museums as for scientific study, so investigations of old buildings began to be made not for the purpose of embodying the results in the building itself as for antiquarian research. The present views of reasonable men with regard to a monument to be protected are that all its historical evidence must be first preserved and then such of its amenities as do not conflict with its historical character.

5 (i.) In a scientific age, with its desire for exact investigation, attempts have been made to define the term "monument," and to classify the different kinds. This word, which figures so largely in this Paper, has a far wider meaning than the narrow one connecting it with memorials to departed worthies. Its derivation from the Latin shows that it is something that reminds, reminds of the past or absent. Perhaps the simplest and widest definition is all that recalls the past. Here the definition depends on the meaning attaching to "past." A thing of to-day will be history to-morrow. It is, however, obvious that some limitation must be placed on that proposition. There are thousands of different things being manufactured to-day exactly as they will be to-morrow. It is perfectly evident that such things belong as much to the future as they do to the past. That which would mark any of them out as monuments would be their intimate association with some historical event, as the steel pen with which some treaty was signed. When a common object is no longer made in the same manner, shape, or style as formerly, then it takes its place amongst the things of the past. Again, all works of art which, from their nature, can never be repeated will belong to the past directly they are finished, for they recall some phase in the evolution of the artist. Or, in another direction, to take something essentially modern, Wright's first aeroplanes are relics of the past, for they illustrate the gradual development of knowledge on that subject. A more detailed definition was used in a draft of a law (1883-4) for the Grand Duchy of Baden. The term was to have included "all immovable and movable objects which have been handed

³⁸ The Society for the Protection of Ancient Buildings.
The Principles of the Society as set forth upon its Foundation
in 1877.

³⁹ The Society for the Protection of Ancient Buildings.
Objections to so-called Restoration.

down from a bygone period of civilisation, and, as characteristic productions of their time, have a special significance for the comprehension of art and art-industry and their development, for the knowledge of antiquity and for historical investigation in general, as well as for keeping alive the remembrance of events of outstanding interest."⁴⁰ The proposed definition for the present English Bill has been drawn to exclude ordinary chattels, but it is evidently intended to include plate and other articles of historic and artistic interest that belong either to a municipal corporation or to the Established Church, or in other words, objects immovable by destination. It reads, "an ancient monument means any immovable monument, in the widest sense of the word, whose preservation is desirable in the interests of the public on account of its importance in the history of the country, the history of civilisation, or the history of architecture or art, or on account of its æsthetic value. And it may include any earthwork, excavation, structure, or erection, as well as any prehistoric or historic work of craftsmanship or art made or apparently made or excavated in the United Kingdom the preservation of which is a matter of public interest by reason of the historic, architectural, traditional, artistic, or archaeological interest."⁴¹

5 (ii.) Another meaning, more especially in Germany, where their word "Denkmal" gives more justification for the significance, has been coming into use. It is the application of the term "monument" to natural scenery of great beauty or interest. Ancient and modern were never qualifications applied to Nature, and though she is old she is ever fresh and new. Though undergoing change, there is no annihilation in "the living visible garment of God."⁴² Granting "Thou fool! Nature alone is antique and the oldest art a mushroom,"⁴³ there is yet an essential distinction between the works of Nature and those of man. The first contain the power of renewing themselves, while the second contain the germ of destruction, so much so that when both are brought together those of Nature will often for a time go to the wall. Therefore to follow the German, and to extend the meaning of the English word "monument"—apparently for no other reason than that both natural scenery and the memorials of the past require protection from the hands of man—is a grave philological inexactitude.

5 (iii.) Monuments may be studied under the heads of "artistic" and "historical," though such a division is not useful for classification, as so many partake of the nature of both; as, for instance, an earthwork would be historical, and a modern work of art may be artistic; but a cathedral would be both artistic and historical. A monument may be historical, either by association with some historical event or by the lapse of time; similarly a monument may be an artistic monument from one of two causes—obviously, in the first case, for beauty of its own; in the other as illustrative of the development towards beauty, even though in itself it may offend the artistic sense. Classification may conveniently be done by periods, nationalities, or by the uses to which the monuments have been put. The Royal Commission on Ancient Monuments in England combines these three classes. It first divides the monuments into two periods—Post-Roman and those previous. The latter are divided by nationality into, first, Pre-Roman monuments and earthworks other than Roman, and second, Roman monuments and Roman earthworks; while the Post-Roman are divided by character into ecclesiastical and secular monuments.⁴⁴ The Scottish and Welsh Commissions have adopted a more detailed classification, based upon the character of the monu-

⁴⁰ G. Baldwin Brown, M.A., *The Care of Ancient Monuments*. (Cambridge, 1905.)

⁴¹ Report from the Joint Select Committee of the House of Lords and the House of Commons on the Ancient Monuments Consolidation and Amendment Bill (H.L.), Ancient Monuments Protection Bill (H.L.), and Ancient Monuments Protection Bill No. 2 (H.L.), together with the proceedings of the Committee and the Minutes of the

Evidence, ordered by the House of Commons to be printed 7th November 1912.

⁴² Goethe.

⁴³ Thomas Carlyle.

⁴⁴ The Royal Commission on the Ancient and Historical Monuments and Constructions of England. First Interim Report. (Cd. 5367.) (London, 1910.)

ment.⁴³ ⁴⁶. Two classes, dead and living, into which monuments may be grouped are useful when discussing the future treatment of a monument. A dead monument is one that has passed out of use and has ceased to serve the purpose for which it was intended or to which it was adapted; a living one is naturally the reverse. An interesting sub-division of movable and immovable monuments has been made by the French when, in their law of 1887, they subdivided immovable monuments into those immovable by nature and those by destination. The first are those that will be destroyed by any attempt at removal; the others, though movable, were never intended to be shifted, or are connected with some important building or corporation where they have a significance. Movable monuments would include coins, medals, cameos and manuscripts; while jewellery and plate which under some circumstances might be considered movable would be immovable by destination where special significance attached to them, as with ecclesiastical jewellery or church and college plate or corporation maces.

5 (iv.) Down to what period should objects be termed monuments meets with varied replies from different countries. It is obvious that objects of more recent date have not, all things being equal, the same value as those of an earlier period, as naturally those of a remote age are few and rare, whereas there still remain many of an age just past. It is highly necessary to do all in one's power to preserve all prehistoric remains, while one would not sacrifice so much to preserve an eighteenth-century building unless it were of exceptional interest. If then it is for the purpose of scheduling monuments for preservation as late a date as possible is desirable. The Italian Government is only limited by the last fifty years. On the other hand, in cataloguing monuments, a late date is more likely to stultify the work than a date that is somewhat more remote. A reasonable expedition in cataloguing is very important, and the work can always be extended in date when the monuments of greater rarity have been noted. While the Prussians are engaged in cataloguing all objects down to 1870 characteristic of their times and of value to art and history,⁴⁷ the English Royal Commission is limited to the year 1700.⁴⁸ As this work of the English Commission is variously estimated to take from forty to eighty years, it is as well that a later date was not fixed. One of the duties of the Royal Commission, however, is to specify those monuments most worthy of preservation, and for this purpose the year 1700 is much too early. The date of the legislative union of England and Scotland has been taken as the limit for the Royal Commission on Ancient Monuments in Scotland.⁴⁹ No date is mentioned in the terms of reference to the Welsh Commission,⁵⁰ nor is it suggested to limit as to date the proposed new law that is to apply to Great Britain.⁵¹ ⁴⁸

6 (i.) To explain the wisdom of preserving the works of a past age by the religious rule of Pugin, the moral maxims of Ruskin, or the social sophisms of Morris would be to omit from discussion the value of all works other than those of the Middle Ages. No appeal for the preservation of the great buildings of a past age need be made to those to whom architectural beauty is an enjoyment comparable with that derived from, say, a great poem. But the lover of the beautiful receives little or no pleasure from the contemplation of a cairn or a brooch. It is for some broader cause that the preservation of ancient monuments is championed by those who realise their value. Historical science, the growth of which has been very briefly described, underlies the desire to retain everything of the past for study. This is the broad principle, but in an age of specialisation each section of the community is interested more especially with

⁴³ The Royal Commission on the Ancient and Historical Monuments and Constructions of Scotland. First Report. (Cd. 4770.) (Edinburgh, 1909.)

⁴⁶ The Royal Commission on Ancient Monuments in Wales and Monmouthshire. First Report. (Cd. 5285.) (London, 1910.)

⁴⁷ Reports of H.M. Representatives abroad showing

the Systems adopted in certain Foreign Countries for the Preservation of Ancient Monuments, Miscellaneous No. 7. (1912.) (Cd. 6200.)

⁴⁸ A Bill intituled "An Act to consolidate and amend the Law relating to Ancient Monuments." E. Beauchamp. Ordered to be printed 26th March 1912. (22.)

that which concerns itself and looks at matters from its own, often narrow, standpoint. One of the most striking features of modern discoveries has been their culminative effect; archaeology throws light on anthropology, anthropology on ethnology, and ethnology on the comparative history of religion. The result has been an increased appreciation of late years of the educational value of ancient monuments. "Better than all books, the keeps of Coucy and Gisors, the ramparts of Carcassonne and Avignon instruct us about the feudal régime. In these books of stone we find what Augustin Thierry has called the soul of history."⁴⁰ One of the most important things in education is to open the mind and awaken the imagination, to realise one's own position in history and to acquire a sense of proportion which alone can give wisdom and sanity to one's enterprises, and what better way is there to achieve this than a lively interest in the relics of history and art.

6 (ii.) Before a nation can take adequate and considered measures for the protection of its treasures it must know of what those treasures consist. Unofficial attempts had been made and a vast amount of isolated and uncollated work done, through the energy of associations and private individuals, when in 1908 three Royal Commissions were appointed to catalogue the monuments of this isle and to specify those most worthy of preservation. It was felt that the work of cataloguing should be systematised and carried on continuously to completion without being at the mercy of private enterprise, the strength of which is always liable to ebb and flow. As illustrative of this, the Committee for the Survey of the Memorials of Greater London published in 1900, at the expense of the London County Council, a volume embracing the memorials of the parish of Bromley-by-Bow.⁴¹ For some time after this the work flagged, but has now been resumed, thanks largely to the energy of Mr. Walter H. Godfrey, whose illuminating articles on the subject appear each month in the *Architectural Review*. Another work, this time due to the commercial enterprise of a firm of publishers, is the *Victoria County History*, which without adequate support is also liable to failure. So far there have been published or are in preparation seventy-four volumes, representing sixteen counties. Beyond this the work has not proceeded as yet. The work done by private enterprise has usually been confined to special classes of monuments. Dr. Murray's *Survey* is devoted to objects of archaeological interest; Michaelis's *Ancient Marbles of Great Britain* to antique sculpture. Scotland is peculiarly rich in works of this description. To mention only two, the works of Messrs. McGibbon and Ross deal fully with religious, domestic, and military architecture, while the sculptured stones of the early Christian period have been the work of the Society of Antiquaries. Wales has its Cymmrodorion Record Series. Church plate, not included by the Welsh Royal Commission in its inventory, is also now being ably catalogued.⁴² It will be seen that the soil on which the Royal Commissions have to work had already been tilled in places. The work of cataloguing is being systematically and thoroughly accomplished. So far the English Commission has published the inventories of Hertfordshire and South Buckinghamshire. The inventory is being published by counties, or, where the volume would exceed about 500 pages, separately in parts of counties. The separate volumes are to contain a preface dealing with the monuments of that volume, the inventory arranged in parishes giving particulars of each monument and accompanied by photographs and drawings necessary for explanation, an index, glossary, a sketch-map of the whole county, and a coloured map showing the distribution of the monuments contained in the volume. An historical summary of the whole county will be published with the final volume of the county, and also separately. The whole of the information collected upon which the inventory is based will ultimately be deposited in the Record Office for public reference.⁴³ In addition to this work, the Commissions

⁴⁰ M. Antonin Proust, French Minister of Fine Arts, 1881-2.

⁴¹ *The Survey of London, &c.* (London, 1900.)

⁴² The Royal Commission on the Ancient and Historical Monuments and Constructions of England. Second Interim Report. (Cd. 6418.) (London, 1912.)

report what monuments are especially worthy of preservation. Taking the first and second reports of the English Commission, it will be seen that while in Hertfordshire there have been noted 882 monuments anterior to the year 1700, eighty-eight, or about 10 per cent., have been recommended as specially worthy for preservation,⁴² and in South Buckinghamshire, while there are 1,535 monuments catalogued, fifty-nine, or about 3 per cent., are scheduled.⁴³ The percentage for the two together works out at 6 per cent. It must be remembered, in considering this small percentage, that the Commission looks on monuments from a national standpoint, and schedules only those that it considers of national importance. Many of the monuments, while not claiming this distinction, are of great local interest as connected with local history or art, and in their case the County Councils are the authorities which should take steps for their preservation. In compiling a list of monuments specially worthy of preservation from a national standpoint many monuments of great importance must therefore necessarily be left out. It has often been pointed out, and was so again in the evidence before the Joint Committee on the Ancient Monuments Bill,⁴⁴ that the selection of certain monuments for preservation will give the idea to the public that those not in the list may be allowed to decay, or may be swept away. Yet it is the important monuments that, owing to public opinion, are more likely to escape destruction.

6 (iii.) It is against preventable and wilful damage and destruction that the attempts at preservation are directed. Man is only able by foresight and knowledge to do his best to protect his work against other causes of destruction. He may use all the methods possible against fire, decay, lightning, earthquakes, and floods, and yet Nature will crumble, split, and destroy his work. Against the results of wars, religious fanaticism, or civil tumult he can as an individual do nothing. The adequate protection of buildings against fire belongs rather to the subject of the construction of buildings than their preservation. In connection with the latter the measures to be adopted are the isolation of the monument from surrounding risks and guarding the means of illumination and heating. Wood beams in chimney-flues⁴⁵ and stoves⁴⁶ in churches have been the cause of numerous fires. The best form of lighting is electric with the wiring in steel tubes. It is questionable if lightning conductors to a building without constant attention to the copper connections are not liable to cause more damage than that against which they are expected to guard. Fortunately earthquakes are not a factor to be taken into account in England; while the treatment of floods falls within the province of engineers, consisting, as it does, in confining river-banks and seeing that there are adequate channels to carry off the flood water.

6 (iv.) The decay of stonework due to the impurities of smoke and acid fumes in the atmosphere will probably not be arrested until by some means, town-planning schemes or otherwise, factories are banished to a limbo of their own. Much has been done of late years in attempting to find a preventive of decay in stone, but so far the results have not proved satisfactory. Baryta water⁴⁷ and the fluates of magnesium and zinc⁴⁸ have been recommended for limestones, but the difficulty is to impregnate thoroughly the stone. If this is not done, and it is very difficult with stone built into a building, the hardened skin will flake off. Limewash made from slaking lias lime in boiling water is no doubt a good preservative, but has the disadvantage of changing for the time being the venerable character of the old work. The fear where the stonework is much decayed of thoroughly dusting the stone with a brush before

⁴² *Daily Telegraph*, 6th April 1912. "Mansion Fires"—Lake House, Wilts.

⁴³ *The Preservation of Churches from Fire*. Journal of the Royal Institute of British Architects, 11th November 1911.

⁴⁴ H. Redfern, F.R.I.B.A. Paper at the International

Smoke Abatement Exhibition, *The Builder*, 29th March 1912.

⁴⁵ Dr. Friedrich Rathgen, *The Preservation of Antiquities*, translated by George A. and Harold A. Auden. (Cambridge, 1905.)

the application of the preservative is often the cause of the poor or even disastrous effects of preservatives, or even of nothing being attempted, the feeling being that more may be destroyed than retained. Cases have been known where the surface has been reduced three-eighths of an inch by three strokes of the brush. In the present state of knowledge with regard to stone preservative a cautious feeling in dealing with an old building is the right course. Waterproof mediums are not satisfactory in appearance, and only affect the surface of the stone, rendering it liable after a time to flake. The neglect of a small precaution has caused the ruin of much old stonework through the expansion due to rust of the iron cramps. The decay of timber through dry-rot is a fruitful source of ruin. The most effectual method of preserving wood is to creosote it. This, however, spoils its appearance for decorative purposes. An old method, the use of a solution of corrosive sublimate to coagulate the albumen in the wood after the affected parts are cut out, has lately been re-tried, and found so far satisfactory by the London County Council at Marble Hill, Twickenham. Very often old work which has been painted will be found to have become thoroughly rotten through the want of ventilation. Carving in this state has been preserved by impregnating it from the back with a solution composed of linseed-oil, litharge, camphor and red lead, to which is added beeswax dissolved in turpentine.⁶⁶ The result is of the nature of a cast of great hardness, the outer skin of which is the old paint and undestroyed wood, the inside being composed of the powder left by the worms solidified by the mixture.

6 (v.) The liability to a certain class of failure in buildings, while not preventable by anything that may be done to the building to protect it, yet may be prevented if the anticipated scheme likely to cause failure is not carried out. The withdrawal of water from the foundations by tube railways or sewers which, though not passing actually under the building, are sufficiently near to affect the foundations, is one such cause. The importance of this is so far recognised that any schemes likely to affect important monuments such as St. Paul's Cathedral are seriously considered in this connection before being allowed. Another cause would be due to the erosion of a river-bank by narrowing the channel up-stream or by dredging operations. Graves also dug close to the walls of a church will often cause failure.

⁶⁶ Henry Crace, *On the Restoration and Preservation of Wood Carvings*. R.I.B.A. Sessional Papers, 1856.

(To be concluded.)



EARLY RIB-VAULTED CONSTRUCTION IN ITALY.

By ARTHUR KINGSLEY PORTER (New York).

[NOTE.—The following article is a brief summary of some of the principal conclusions I have reached as a result of researches carried on in Italy since 1908. It is merely a preliminary publication, designed to call the attention of archaeologists to a highly important group of hitherto either entirely or almost unknown Italian churches, during the not inconsiderable time that must elapse before I can put the results of my studies in final form. Lack of space has prevented me from printing the documents, or analysing in detail the stylistic peculiarities, upon which my ascriptions of date are based. In a few cases I am able to refer to a more or less complete discussion of these points that I have already published; in many others I have been forced to make my statements upon the basis of evidence which has not yet been printed. For such cases I can only ask the reader's patience and indulgence.—A. K. P., June 1912.]

THE Romanesque rib-vaulted edifices of Northern Italy have long been the subject of violent archaeological controversy. Ever since 1829, when Cordero * dared to assign San Michele at Pavia to the twelfth century, historians of architecture have been divided into two schools—the one convinced that the rib-vaulted edifices of Lombardy dated from the ninth, the eighth, the seventh century, or even remoter antiquity, while the other stoutly contended that they were erected after the year 1000, and should be assigned to the eleventh, twelfth, or even thirteenth century. In fact there is no epoch between the fourth and thirteenth centuries in which some scholar of reputation has not placed San Michele of Pavia. A divergence of opinion thus covering 900 years regarding the date of a much-studied and comparatively well-known monument is an anomaly in the history of art, the more so as this school of Romanesque construction is of admitted importance and interest, not only in itself, but because of its bearing upon the general history of mediæval architecture. It is generally conceded by archaeologists to-day that the rib-vault was the generating principle, the central feature of the system of construction which dominated Europe from the thirteenth to the sixteenth century, and which we know by the name of Gothic. It therefore becomes a matter not merely of academic curiosity to determine whether to the Italians or to the French or to the English is due the credit of having discovered this construction.

Thanks to the researches of M. Lefèvre-Pontalis † and other French scholars, it is now beyond dispute that the rib-vault appeared in the Île-de-France about the year 1100. Mr. Bilson would have us believe that it was known in England somewhat earlier than this, but even he does not claim that it was used before the last quarter of the eleventh century. To determine, therefore, whether the rib-vault originated in England or France and was

subsequently imported into Italy, as most northern archaeologists maintain, or whether, on the contrary, it originated in Italy, and was subsequently imported into France and England, as many Italian writers state, it is obviously necessary first of all to establish with precision the date of the earliest existing rib-vaulted constructions in Italy. Up to the present it has been impossible to do this satisfactorily on the basis of the evidence available on the subject. I have recently had the good fortune, however, to come across a number of unknown monuments and new documents that throw new light upon the troubled question of the chronology of Lombard architecture. Together with the monuments already known, these new monuments may be arranged in a sequence in which may be traced the rise, culmination, and decline of the Lombard style and its characteristic motives. Numerous points of chronological support are supplied by edifices of authenticated date, of which now we have happily no lack. By means of the method of comparison, it thus becomes possible to determine the chronology of undated monuments, such as, for example, Sant' Ambrogio at Milan and San Michele at Pavia. To give adequate study to each of the several hundred edifices comprising this series, and to explain the evidence for dating each of them, would far exceed the limits of the present article. I shall therefore merely indicate a few of the more important monuments, and try to trace in a very general, broad way the chronological development of the style.

I have found not the slightest evidence to lend support to that school of archaeologists which believes that rib-vaults were erected in Lombardy before the year 1000. As Cattaneo * guessed, perhaps, rather than proved, the architecture of Northern Italy from the sixth to the tenth centuries was uniformly

* Cordero, Giulio Conte di S. Quintino, *Dell' italiana architettura durante la dominazione longobarda*. Brescia: Bettoni, 1829, 12mo.

† *L'Architecture Religieuse dans l'ancien diocèse de Soissons*. Paris: Plon, 1894, 2 vols. Folio.

* *L'architettura in Italia dal secolo VI. al mille circa*. Venezia: Tipografia Emiliana, 1888, 8vo. There is a French translation under the title, *L'Architecture en Italie du VI. au XI. siècle*; traduit par A. Cravellie, Venise, 1859, 8vo. There is also an English translation under title, *Architecture in Italy from the Sixth to the Eleventh Century*; translated by Countess Isabel Curtis. Venice: Chalmers in Bermann, 1889, 8vo.

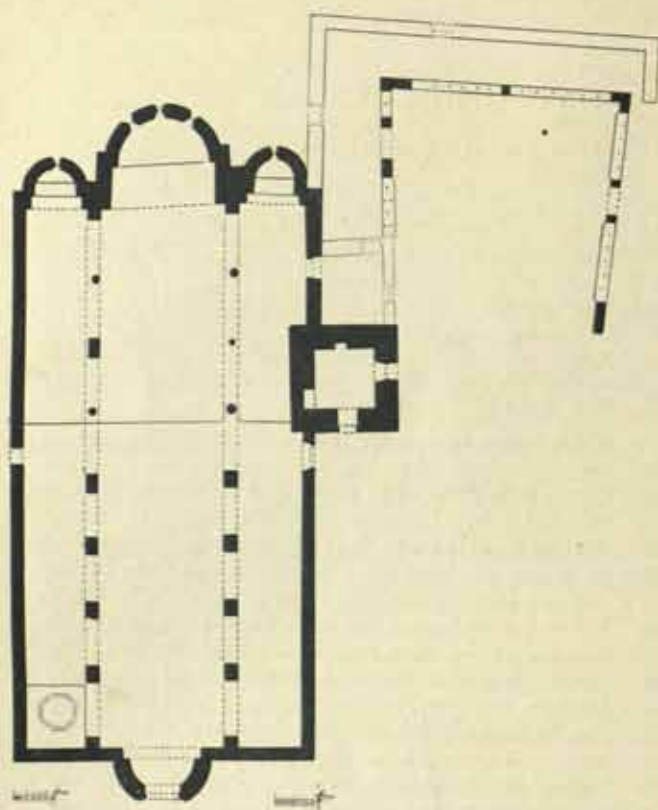


FIG. 1.—S. GIORGIO OF VALPOLICELLA: PLAN.
DRAWING OF A. COVINI.



FIG. 3.—PIEVE OF BAGNACAVALLLO: SOUTH SIDE AISLE.

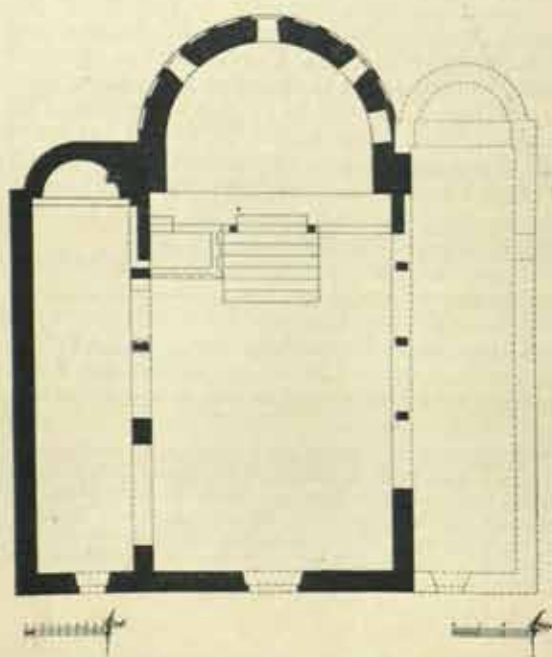


FIG. 2.—S. VINCENZO OF GALLIANO: PLAN.
DRAWING OF A. COVINI.



FIG. 4.—S. MARIA MAGGIORE OF LOMELLO: RUINS OF
ANCIENT NAVE.

basilican or columnar. Vaults were employed only in circular edifices and in the choirs and crypts of basilicas, the naves and side aisles of the latter being invariably covered with wooden roofs. The list of extant edifices belonging to this period in Lombardy—as in fact everywhere in Europe—is meagre, nor have I been able to make any other additions to the roll of monuments already known than a number of crypts, capitals, and fragments of church furniture. However, there is no room for doubt upon the general structural characteristics of the style of this period. S. Giorgio of Valpolicella (fig. 1) marks the extreme point of development to which the basilica attained during the Carolingian epoch. Square piers are here substituted for columns in certain of the supports, and there is a consequent tendency towards an alternate rhythm in the disposition of the plan. Farther than this architecture did not advance in Lombardy before the year 1000.

This is proved by the church of S. Vincenzo of Galliano (fig. 2), which was consecrated in 1007, as is known from contemporary inscriptions and frescoes. S. Vincenzo, like S. Giorgio, is a simple wooden-roofed basilica; the only point of structural advance which the former shows over the latter, is the fact that at S. Vincenzo the columns are all suppressed, the supports being uniformly piers of more or less irregular form, but generally square.

A step in advance is shown in the well-known Pieve of Bagnacavallo (fig. 3), a monument certainly about contemporary with S. Vincenzo of Galliano, although in the absence of documentary evidence it has been fantastically ascribed to the sixth century. Here, to strengthen the piers, buttresses were built against them on the side facing the side aisles. Really important progress in the art of building, however, appears to have been first made in the church of S. Maria Maggiore of Lomello (fig. 4), an edifice which, though it has hitherto escaped the notice of archaeologists, must certainly rank among the most important and interesting Lombard Romanesque structures extant.* Unfortunately there is no documentary proof of the date of its construction; several peculiarities of the style, however, leave no doubt that it must have been erected about 1025. Lomello is therefore the earliest example in Lombardy, and so far as I know in Europe, of a nave spanned by transverse arches, and of side aisles groin-vaulted throughout. Although the transverse arches of the nave spring only from every other pier, the piers have all the same section, the intermediate ones being provided with a system continued to the roof, a motive, it will be remembered, of great importance in the Romanesque architecture of Northern Europe, and of which

again I find no earlier example either north or south of the Alps. The piers of Lomello in section are simple cylinders on which are engaged the pilaster strips of the system, and may thus be considered as forming a step in advance of Bagnacavallo in the evolution of the compound pier. Lomello thus marks a remarkable advance over Galliano, an advance which at first sight might seem too great to have been accomplished in the brief score of years which separated the two structures. On closer study, however, it becomes evident that all the changes introduced in the structure of Lomello, radical as they seem, were in fact comparatively simple, and resulted, one and all, from the anxiety of the builders to economise wood. For this reason the side aisles were covered with groin-vaults, and transverse arches in stone were substituted for the heavy timbers of the nave roof that would have otherwise been required, and as corollaries to the transverse arches and vaults followed necessarily the modified section of the piers and the system.

The same anxiety to economise wood led the builders to try another interesting experiment in the church of Montalino, near Stradella (fig. 5). Here compound piers and a continuous system were essayed for the first time. It was evidently the intention to cover nave and side aisles with groin-vaults, but a settlement of the foundation seems to have dismayed the builders, and the vaults were never erected. The system is not alternate, and the compartments of the nave are very oblong. Documentary evidence for the date of this edifice, which has already been noticed by Cavagna Sangiuliani* and the Commendatore Rivoira,† is unfortunately lacking, but the monument was undoubtedly erected about the year 1035.

The ruined abbey of Sannazzaro Sesia was begun in 1040. I have recently published in *Arte e Storia* ‡ the documents which establish this date. The plan (fig. 6) closely resembles that of Montalino; there are the same compound piers, the same uniform system. At Sannazzaro Sesia, however, an important innovation was introduced. The nave was covered with rib-vaults. These, it is true, have perished; but the fact that they existed is proved by the profile of the system, by fragments of the vaults still in place, and by the well-preserved fragments of a similar rib-vault in the eastern narthex (fig. 7).

It is therefore evident that at the close of the first half of the eleventh century the rib-vault was not only known in Piemonte, but was erected over a nave of considerable size. With rib-vaults, com-

* *La chiesa di San Marcello in Montalino*. Sua conservazione nell'elenco dei monumenti nazionali. Pavia, Tip. del Corriere Ticinese, 1893. Pamphlet.

† *Le Origini della Architettura Lombarda*. Milano, Ulrico Hoepli, 1908, 4to. p. 214.

‡ Serie V., Anno xxx., pp. 295 ff., 321 ff., 366 ff.

* I have published a monograph upon this edifice in *Arte e Storia*, Serie V., Anno xxx., pp. 175 ff., 193 ff.

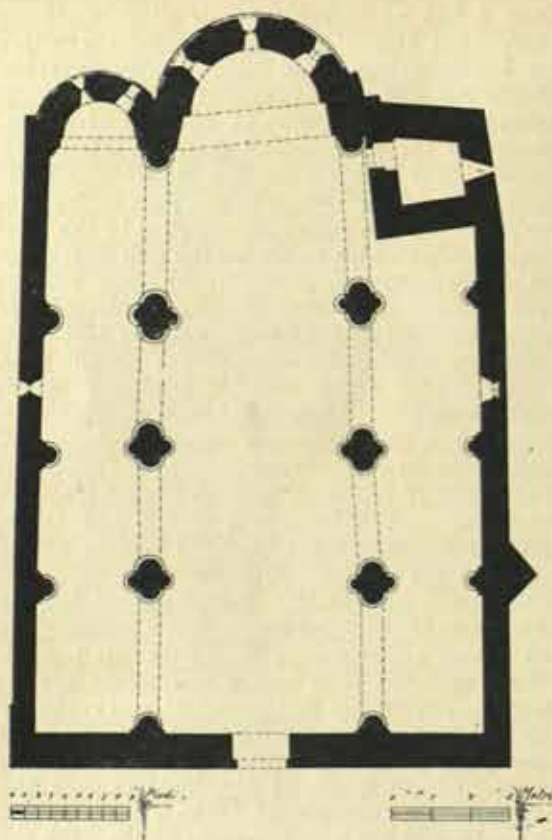


FIG. 5.—S. MARCELLO DI MONTALINO AT STRADELLA:
PLAN. DRAWING OF A. COVINI.

pound piers, and continuous systems known and practised, there remained to be developed only one essential feature of the Lombard style—that is to say, the motive of alternating supports. This, it has been seen, had already been foreshadowed at Lomello; it was brought to perfection in a monument of the end of the first half of the eleventh century—S. Maria of Calvenzano. The nave was spanned by transverse arches, and the piers from which these arches sprang are heavier than the intermediate piers. There is even alternation of the aisle responds, those opposite the piers bearing the transverse arches being heavier than the others.

In all these monuments of the first half of the eleventh century there is evident a gradual and continuous evolution of ornament as well as of structure, showing all stages in the transition from the bare Carolingian style to the rich ornamentation of the Lombard period. Especially noteworthy is the evolution of the arched corbel table which, contrary to what has frequently been written, does not appear in Lombardy in its developed form earlier than about 1040. The Lombard capital appears for the first time at Lodi

Vecchio (fig. 8), an edifice in the different parts of which the evolution of the motive may be easily followed.

With all the various features of the Lombard style thus separately developed as early as 1050, it may be imagined that the builders were not slow to combine them. Although monuments of the third quarter of the eleventh century are scarce, and none of them is certainly dated, there can be little doubt that during these years was erected the greater part of S. Ambrogio of Milan. The style of this edifice is certainly more advanced than that of the monuments of the first half of the eleventh century; on the other hand it is less advanced than that of the churches of S. Stefano and S. Nazaro of Milan, both begun in 1075. To the last quarter of the eleventh century and early years of the twelfth century doubtless belongs S. Michele of Pavia.

That S. Ambrogio, S. Michele, the Chiesa d'Aurona, and the other famous monuments of the Lombard style are really of this epoch is proved not only by the long list of authentically dated churches of the first half of the eleventh century to which they form the logical sequel, not only by their resemblance to S. Stefano and S. Nazaro of Milan and other dated buildings of the second half

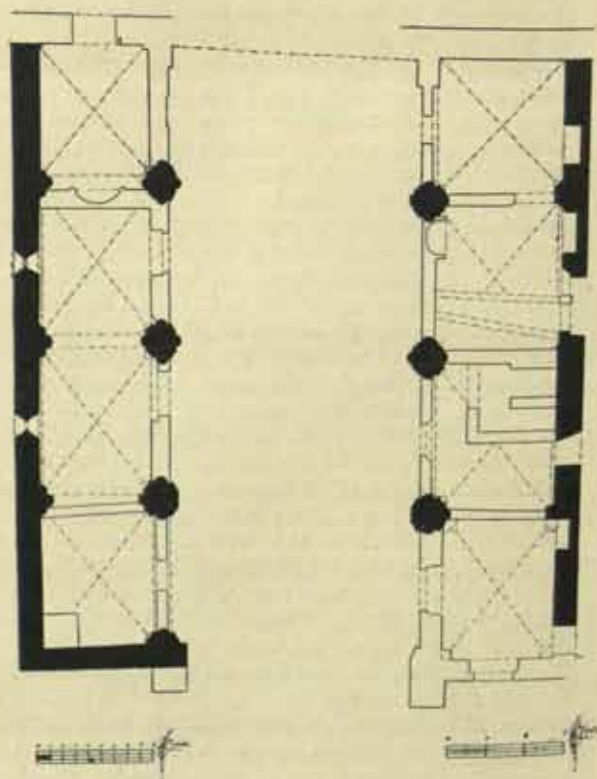


FIG. 6.—BADIA AT SANNAZZARO SERIO: PLAN OF RUINS.
DRAWING BY A. COVINI.



FIG. 7.—BADIA AT SANNAZZARO SEDIA: REMAINS OF RIB VAULT OF 1040.

of the eleventh century, but by the fact that they are obviously less advanced than a very large number of dated edifices of the first half of the twelfth century. Lack of space makes it im-



FIG. 8.—S. BASSIANO AT LODI VECCHIO: CAPITAL OF c. 1050, SHOWING TRANSITION TO LOMBARD STYLE.

possible even to mention the greater number of these; one typical example, however, will serve to illustrate the character of all. The church of S. Savino at Piacenza (fig. 9), which has never been adequately described,* was consecrated in 1107; notwithstanding an unfortunate modern restoration it is perhaps the best preserved of all Lombard edifices, and from any point of view deserves to rank with S. Ambrogio of Milan and S. Michele of Pavia, as among the most venerable and interesting extant Romanesque monuments of Northern Italy. That the other two edifices of the triad are earlier than S. Savino is demonstrated by the more advanced structure of the latter. The gallery is omitted, and the nave vaults are reinforced by buttresses far more Gothic in character than any extant in Milan or Pavia. Moreover, in the western bay, evidently the latest portion of the edifice, rib-vaults are abandoned and groin-vaults substituted, precisely as happened in several other Lombard monuments, which have always been recognised as more advanced in style than S. Ambrogio or S. Michele. Finally, the ornament of S. Savino is obviously intermediate between that of S. Michele and S. Pietro in Ciel d'Oro of Pavia, a church which it is known was consecrated in 1129.

Even more striking confirmation of the early date of Lombard rib-vaults is supplied by a most important and hitherto practically unknown group of churches at Corneto-Tarquiniæ, in Umbria, near Civita Vecchia. The principal member of this group is the basilica of S. Maria di Castello (fig. 10). This church forms a regular museum of inscriptions of all ages, by means of which it becomes possible to put a date on almost every stone of the edifice. Yet no historian of architecture, no writer on art, has published a single view of the building or given even a cursory description of the architecture.† The edifice is a characteristic Lombard church with alternate system and rib-vaults throughout. It was begun in 1122 and completely finished by the middle of the twelfth century, though subsequently remodelled. When we reflect that rib-vaults were not erected over naves in the Ile-de-France until about 1125, the significance of this example in central Italy becomes apparent.

The chief interest of S. Maria di Castello, however, is that, by a comparison of style, it makes it possible to assign dates to the large and vastly important series of Romanesque monuments of Corneto. These are up to the present entirely unknown, but I

* I shall shortly publish a monograph on this monument in the *American Journal of Archaeology*.

† I have published an article on this church in *Arte e Storia*, Serie V., Anno xxxi., pp. 139 ff., 169 ff.

have no doubt will some day be accorded the place they merit among the most interesting remains of mediæval architecture in all Italy. Three—the churches of S. Giacomo, the Annunziata and S. Giovanni—must certainly be older than S. Maria, and hence anterior to 1122, and

and at least as early as the third quarter of the eleventh century.

These few examples of rib-vaulted edifices of the eleventh and early twelfth centuries, selected from a great number, for the most part still unknown, which might be named, are sufficient, I think, to

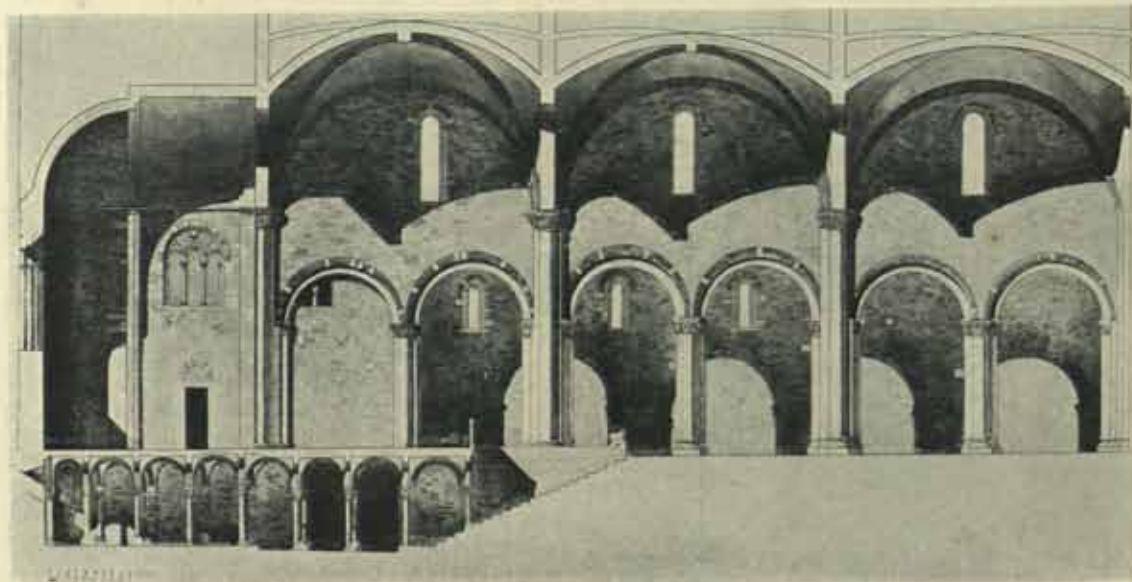


FIG. 9.—S. SAVERIO AT PIACENZA: SECTION OF CHURCH CONSECRATED IN 1107. DRAWING OF A. COVINI.

S. Giacomo cannot have been erected later than 1090. All these churches are rib-vaulted throughout, and all, including S. Giacomo (fig. 11), show evident imitation of Lombard edifices of the type of S. Ambrogio. If, therefore, the Lombard style was copied in central Italy in 1090, it must have originated in Lombardy considerably before this,

show that the chronology of Lombard architecture should no longer be a matter of conjecture and dispute. Instead of S. Ambrogio, S. Michele, and a few similar edifices of unknown date standing isolated by themselves, leading out of nothing, developing into nothing, we have in the Lombard style a long series of monuments, not a few of

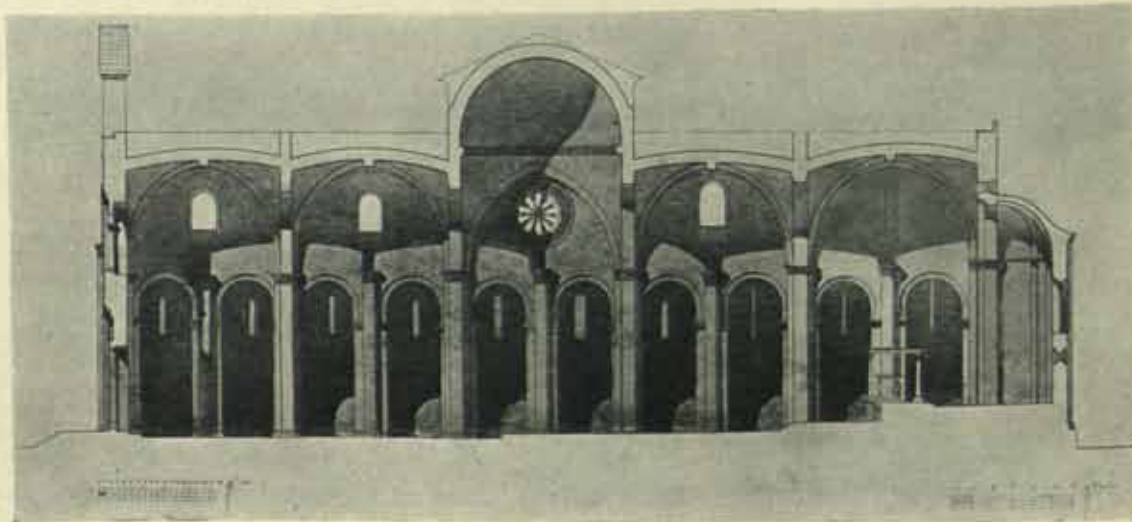


FIG. 10.—S. MARIA DI CASTELLO AT CORNETO TARQUINIA, BEGUN 1122: SECTION DRAWN BY A. COVINI.

which are authentically dated, fitting in, each with the other, to form a logical and continuous evolution. The origin, the development, the decline of each characteristic of the style may be traced and dated. Lombard architecture is not a sporadic, lawless appearance; it presents a growth as steady, as continuous as that of Gothic architecture. The laws of its archæology are easily to be deduced from its remaining monuments, and these laws once studied, it is possible to determine within a few years the date of a Lombard building from the mere inspection of its style, as accurately as it is possible to determine by a similar method the date of a Gothic edifice. It is clear that the Lombard builders erected rib-vaults as early as

the middle of the eleventh century, and hence before such constructions appeared in France or England. tects in S. Vitale of Ravenna and elsewhere, continued to be erected in Italy throughout the Dark Ages. By means of doming, the builders were able to erect groin-vaults with the aid of a centering consisting merely of a wooden arch following the lines of the groins. Only for the uppermost courses was the use of a cerce perhaps necessary. The north Italian builders in the eleventh century had thus been accustomed for centuries to build groin-vaults without a solid centering.*

What happened when the rib-vault was invented, possibly at Sannazzaro Sesia, was merely this. The builders wished to erect a vault of considerable dimensions with a minimum of centering. They would have been able to erect domed groin-vaults

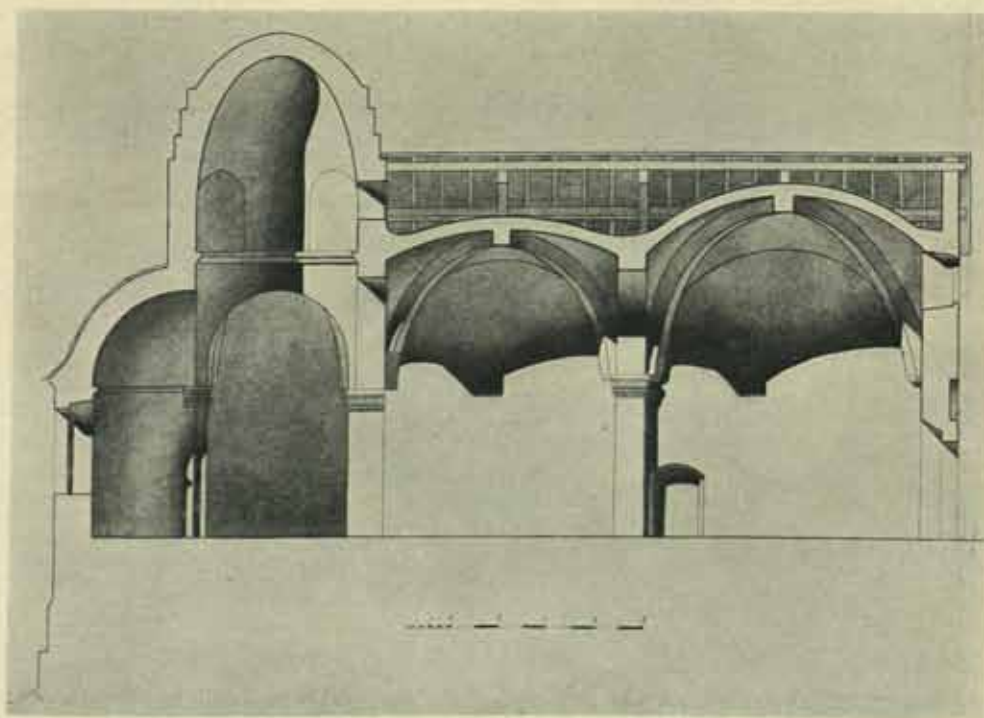


FIG. 11.—S. GIACOMO OF CORNETO TARQUINIA, c. 1090: SECTION DRAWN BY A. COVINI.

the middle of the eleventh century, and hence before such constructions appeared in France or England.

It is a most surprising fact that the earliest rib-vaults in Lombardy were erected over naves. In France, it will be remembered, early rib-vaults were invariably constructed over areas of small dimensions, in side aisles or under towers, and only at a comparatively late date were naves vaulted.

The explanation lies in the divergent building traditions of Italy and France. The Lombard builders had inherited from the Roman and Byzantine architects the art of constructing vaults with a minimum of centering. Domed groin-vaults, introduced by the Byzantine archi-

in the usual way with two wooden arches; the vaults being large, however, this centering would have had to be heavy and, in a region where wood is very scarce, expensive. The builders consequently hit upon a very simple device. They erected very light wooden arches, sufficient not to support the entire vault, but merely to serve as centering for two arches in brick, which we may as well call by their proper name, diagonal ribs. The ribs when once completed were amply strong enough to serve as a centering for the vaults. Thus

* I have developed this point in a monograph on *The Construction of Lombard and Gothic Vaults*. New Haven: Yale University Press; and Oxford: Henry Frowde, 1911. 8vo.

the latter were erected almost without the use of a temporary wooden substructure.

In Lombardy rib-vaults were never used except over spaces of large dimension, where domed groin-vaults could not be erected without the use of an unduly heavy centering. The desire to economise centering was the sole reason the rib-vault was invented in Italy, and the sole reason it was employed during the eleventh and twelfth centuries.

Before the introduction of the rib-vault, the French builders had never erected vaults without a full centering in wood. Not one of the various devices known to Roman and Byzantine builders to compass this end survived north of the Alps. About the year 1100, however, whether urged by a special scarcity of wood or by a general desire for economy, the French builders began to imitate

Italian methods of construction. The domed groin-vault and the rib-vault both appear in their edifices. The former, successful in Italy when constructed of brick, did not adapt itself well to stone, the material almost exclusively used in France. It was hence abandoned in favour of the rib-vault, which, after a long period of experiments, was developed and perfected with results which are familiar to all. Throughout the Gothic period, however, the rib-vault continued to be erected without other centering in wood than a light support for the ribs and a cerce for the uppermost courses. It was invented in Lombardy as a device to economise centering, and it was thence borrowed by the French and developed into the manifold forms it assumed during the transition period, always with the same end in view.



[Photo. Ch. Eggimann, Paris.]

SAINT-MICHEL, PAVIA: WEST FRONT.

Reduced from a Plate in M. Ch. Eggimann's *L'Art Roman en Italie*, by kind permission of the publishers, Librairie Centrale d'Art et d'Architecture, Paris.



9 CONDUIT STREET, LONDON, W., 14th June 1913.

CHRONICLE.

The Annual Elections.

At the Business General Meeting held on Monday, 9th June, the Officers, Council, and Standing Committees for the Session 1913-14 were declared duly elected in accordance with the Scrutineers' Reports as follows:—

THE COUNCIL.

PRESIDENT.—Reginald Blomfield, A.R.A.

VICE-PRESIDENTS.—Alfred William Stephens Cross, M.A. Cantab.; George Hubbard, F.S.A.; Henry Vaughan Lanchester; Ernest Newton, A.R.A.

PAST PRESIDENTS.—Thomas Edward Colcutt; Leonard Stokes.

HON. SECRETARY.—E. Guy Dawber.

MEMBERS OF COUNCIL.—Harry Percy Adams; Walter Cave; Thomas Edwin Cooper; H. P. Burke Downing; William Adam Forsyth; Henry Thomas Hare; Gerald Calcott Horsley; Arthur Keen; Charles Stanley Peach; Sydney Perks, F.S.A.; Charles Henry Bourne Quennell; Edwin Alfred Rickards; Herbert Duncan Searles-Wood; Walter John Tapper; Septimus Warwick; William Henry White; Edmund Wimperis; William Woodward.

ASSOCIATE-MEMBERS OF COUNCIL.—Robert Atkinson; George Leonard Elkington; Kensington Gammell; Sidney Kyffin Greenslade; Edwin Gunn; Edwin Stanley Hall, M.A. Oxon.

REPRESENTATIVES OF ALLIED SOCIETIES.—John Brooke (Manchester Society of Architects); George Hastwell Grayson, M.A. Cantab. (Liverpool Architectural Society); Arthur Henry Hind (Leicester and Leicestershire Society of Architects); William Milburn (Northern Architectural Association); Albert Edward Murray (Royal Institute of the Architects of Ireland); George Herbert Oatley (Bristol Society of Architects); Alexander Nisbet Paterson, M.A., A.R.S.A. (Glasgow Institute of Architects); Ernest Richard Eckett Sutton (Nottingham Architectural Society); Adam Francis Watson (Sheffield Society of Architects).

REPRESENTATIVE OF THE ARCHITECTURAL ASSOCIATION. William Curtis Green.

THE STANDING COMMITTEES.

ART.—*Fellows*: Edward Guy Dawber; William Adam Forsyth; John Alfred Gotch, F.S.A.; Henry Thomas Hare; Gerald Calcott Horsley; Henry Vaughan Lanchester; William Richard Lethaby; Halsey Ralph Ricardo; Henry Heathcote Statham; Walter John Tapper.—*Associates*: Robert Atkinson; Matthew James Dawson; Sidney Kyffin Greenslade; Alfred Wyatt Papworth; Philip Webb; Arthur Needham Wilson.

LITERATURE.—*Fellows*: David Theodore Fyfe; David Barclay Niven; George Halford Fellowes Prynn; Harry

Sirr; Richard Phené Spiers, F.S.A.; Charles Sydney Spooner; Charles Harrison Townsend; Francis William Troup; Edward Prielean Warren, F.S.A.; Paul Waterhouse, M.A. Oxon.—*Associates*: Martin Shaw Briggs; Walter Millard; William Godfrey Newton, M.A. Oxon.; Horatio Porter, M.A. Cantab.; Charles Edward Sayer; William Henry Ward, M.A. Cantab.

PRACTICE.—*Fellows*: Max Clarke; Herbert Osborn Cresswell; Matt. Garbutt; Edward Greenop; George Hubbard, F.S.A.; Sydney Perks, F.S.A.; Herbert Duncan Searles-Wood; Alfred Saxon Snell; William Henry White; William Woodward.—*Associates*: Horace William Cubitt; Percival Maurice Fraser; Kensington Gammell; Edwin Gunn; Charles Edward Hutchinson; Herbert Shepherd.

SCIENCE.—*Fellows*: Alfred Conder; William Edward Vernon Crompton; Bernard Dicksee; Frederic Richard Farrow; Ernest Flint; George Hornblower; Alan Edward Munby, M.A. Cantab.; Charles Stanley Peach; Ravenscroft Elsey Smith; Robert Watson.—*Associates*: Robert John Angel, M.Inst.C.E.; William Robert Davidge, Assoc. M.Inst.C.E.; George Leonard Elkington; Charles John Marshall; Digby Lewis Solomon, B.Sc.; Ernest Alexander Young.

AUDITORS.—John Hudson; William Henry Burt.

The Scrutineers' Reports, giving details of the voting, form part of the Minutes, pp. 375, 376.

The Annual Dinner.

The Annual Dinner of the Royal Institute took place at the Whitehall Rooms, Hôtel Métropole, on Wednesday, 4th June, the President, Mr. Reginald Blomfield, A.R.A., presiding. Covers were laid for 165 guests, but Lord Milner, who had intended to be present and to respond to the toast of "The Houses of Parliament," was unavoidably prevented at the last moment, and the task of responding to the toast was kindly undertaken by Lord Saye and Sele. At the high table on the President's right were the Lord Mayor, Lord Saye and Sele, Sir Thomas Barlow, Bart., K.C.V.O., President of the Royal College of Physicians, Sir T. G. Jackson, Bart., R.A., Dr. Donaldson, Vice-Chancellor of Cambridge University, Sir A. Selby-Bigge, K.C.B., Permanent Secretary of the Board of Education, Sir Thomas Brock, K.C.B., R.A., Mr. Frank Dicksee, R.A., Sir Alfred East, A.R.A., President of the Royal Society of British Artists, Sir Alfred Keogh, K.C.B., Rector of the Imperial College of Science and Technology, Sir W. Goscombe John, R.A., Mr. T. E. Colcutt, Past President R.I.B.A., and Mr. Sheriff Bower. On the President's left were Sir Rickman Godlee, Bart., President of the Royal College of Surgeons, Sir Archibald Geikie, K.C.B., President of the Royal Society, Sir Wm. Richmond, K.C.B., R.A., Mr. Lionel Earle, C.B., Secretary of H.M. Office of Works, Sir Frank Short, R.A., President of the Royal Society of Painter Etchers, Sir George Frampton, R.A., Mr. A. S. Cope, R.A., Sir Ernest George, A.R.A., Past President R.I.B.A., Mr. Basil Champneys, Mr. R. Elliott Cooper, President of the Institution of Civil Engineers, Mr. Alder-

man and Sheriff Cooper, Mr. W. E. Woolley, President of the Surveyors' Institution, and Mr. Ernest J. Brown, President of the Institute of Builders. Presiding at the six lower tables were the Vice-Presidents, Mr. Ernest Newton, A.R.A., Mr. E. Guy Dawber, Mr. Alfred W. S. Cross, and Mr. George Hubbard, F.S.A.; and Mr. J. Alfred Gotch, F.S.A., and Mr. James S. Gibson. The following is an alphabetical list of those present:—

Mr. Maurice B. Adams [F.]; Mr. Percy Adams [F.]; Mr. P. T. Adams [A.]; Dr. H. K. Anderson, Master of Caius College, Cambridge; Mr. T. M. E. Armstrong; Mr. R. Frank Atkinson [F.]; Mr. Francis Plews Bacon, Master of the Vintners' Company; Sir Thomas Barlow, Bart., K.C.V.O.; Mr. Mark Barr; Mr. Ernest R. Barrow [F.]; Mr. W. C. Beetles; Mr. Arthur Bentley [Licentiate]; Mr. Reginald Blomfield, A.R.A., President; Mr. Sheriff Bower; Mr. C. W. Bowles [Licentiate]; Sir Thomas Brock, K.C.B., R.A.; Mr. Ernest Brown, President of the Institute of Builders; Mr. J. Annan Bryce, M.P.; Mr. Edgar Bundy; Dr. J. J. Burnet, A.R.S.A. [F.]; Sir David Burnett, the Lord Mayor; Sir Edward Busk; Mr. Joseph Causton, Master of the Skinners' Company; Mr. E. K. Chambers, C.B.; Mr. F. Dare Clapham [F.]; Mr. Basil Champneys; Mr. Max Clarke [F.]; Mr. Felix Clay [Licentiate]; Mr. Thomas E. Colclutt [F.]; Mr. W. R. Colton, A.R.A.; Mr. Alfred Conder [F.]; Mr. Alderman and Sheriff Cooper; Mr. R. Elliott Cooper; Mr. T. Edwin Cooper [F.]; Mr. A. S. Cope, R.A. [Hon. A.]; Mr. Alfred W. S. Cross [F.], Vice-President R.I.B.A.; Mr. W. R. Davidge [A.]; Mr. E. Guy Dawber [F.], Vice-President R.I.B.A.; Mr. C. J. Dawson [F.]; Mr. Walter Dewes [Licentiate]; Mr. Frank Dicksee, R.A. [Hon. A.]; Colonel G. A. H. Dickson, M.V.O.; Rev. S. A. Donaldson, D.D.; Mr. Lionel Earle, C.B.; Sir Alfred East, A.R.A. [Hon. A.]; Mr. V. A. Edlin [Licentiate]; Mr. H. England; Mr. J. A. Eshelby; Mr. Frank Fox [A.]; Sir George Frampton, R.A. [Hon. A.]; Mr. P. M. Fraser [A.]; Mr. Patrick Gardiner; Sir Archibald Geikie, K.C.B.; Sir Ernest George, A.R.A. [F.]; Mr. James S. Gibson [F.]; Mr. Herbert Gilbey; Sir Rickman Godlee, Bart.; Mr. J. Alfred Gotch, F.S.A. [F.]; Mr. W. Curtis Green [F.], President of the Architectural Association; Mr. Edward Greenop [F.]; Mr. Alderman Grigg; Mr. L. Rome Guthrie [A.]; Mr. Stanley Hall [A.]; Mr. E. Haslehurst; Mr. J. C. Hanson, Master of the Ironmongers' Company; Mr. Ewen Harper [F.]; Mr. George Hornblower [F.]; Mr. Gerald C. Horsley [F.]; Mr. George Hubbard, F.S.A. [F.]; Dr. W. L. Hubbard; Mr. John Hudson [F.]; Mr. A. Edward Hughes [F.]; Mr. Hughes; Sir T. G. Jackson, Bart., R.A.; Mr. Cecil F. J. Jennings; Mr. J. J. Jones [F.]; Sir W. Goscombe John, R.A. [Hon. A.]; Sir Alfred Keogh, K.C.B.; Mr. Sydney D. Kitson [F.]; Mr. Walter Lawrence, jun., President of the London Master Builders' Association; Mr. Percy W. Lovell [A.]; Mr. Edwin L. Lutjens, A.R.A. [F.]; Mr. J. Y. W. MacAlister, F.S.A.; Mr. Ellis Marsland; Mr. A. W. Martyn; Mr. H. E. Mathews [F.]; Mr. J. Douglass Mathews [F.]; Professor Gerald Moira [H.A.]; Mr. Alfred Aylett Moore; Mr. Albert W. Moore [F.]; Mr. George H. Morice, Master of the Grocers' Company; Mr. Spencer W. Morris, Master of the Carpenters' Company; Mr. Alan E. Munby [F.]; Mr. J. Munro; Mr. Albert E. Murray [F.], R.H.A., President of the Royal Institute of the Architects of Ireland; Mr. G. P. Nash; Mr. Ernest Newton, A.R.A. [F.]; Mr. H. A. Newton; Mr. W. G. Newton [A.]; Mr. J. Coulson Nicol [A.]; Mr. Harold Oakley [Licentiate]; Mr. C. Stanley Peach [F.]; Mr. Sydney Perks, F.S.A. [F.]; Mr. S. Perkins Pick [F.]; Professor Beresford Pite [F.]; Mr. F. W. Pomeroy, A.R.A. [Hon. A.]; Mr. E. Turner Powell [F.]; Mr. J. J. Redding; Sir Wm. Richmond, K.C.B., R.A.

[Hon. A.]; Mr. E. A. Rickards [F.]; Mr. W. E. Riley [F.]; Lord Saye and Sele; Sir Amherst Selby-Bigge, K.C.B.; Mr. Evelyn Shaw; Mr. Herbert Shepherd [A.]; Sir F. Short, R.A.; Mr. Samuel G. Short [Licentiate]; Mr. John W. Simpson [F.]; Mr. John Slater [F.]; Mr. F. Danby Smith [A.]; Mr. Lewis Solomon [F.]; Mr. G. Gordon Stanham; Mr. C. A. L. Sutton [A.]; Mr. Ernest B. Sutton [F.], President of the Notts Society of Architects; Mr. Arthur Sykes [F.]; Mr. Augustus W. Tanner [A.]; Mr. Walter J. Tapper [F.]; Mr. Wm. H. Thomas; Mr. Percy B. Tubbs [F.], President of the Society of Architects; Mr. F. G. Waddell-Dudley; Colonel Warden; Mr. Edward Warren, F.S.A. [F.]; Mr. Hugh Watkins; Mr. W. Henry White [F.]; Mr. Herbert Wigglesworth [F.]; Mr. H. W. Wills [F.]; Mr. Cyril Wintle, Master of the Merchant Taylors' Company; Mr. F. Derwent Wood, A.R.A.; Mr. Chas. Woodward [A.]; Mr. Frank Woodward; Mr. Wm. Woodward [F.]; Mr. W. Edward Woolley; Mr. F. R. Yerbury, Secretary of the Architectural Association; Mr. E. A. Young [A.]; Mr. R. M. Young [F.]; Mr. Ian MacAlister, Secretary, and other members of the staff.

The usual loyal toasts, proposed by the President, were enthusiastically honoured.

Mr. J. S. Gimson [F.] proposed "The Houses of Parliament." He said it was peculiarly fitting that architects should drink most heartily to this toast. In the first place, they all admired and appreciated the buildings in which Parliament carried on its great work. In the second place, there was something of an analogy between the profession of architecture and the profession (if he might call it so) of government. Good government, stable government, the making of laws which were to stand for all time, must be founded on a sure foundation of equity, as was only paralleled by the sure foundation on which any great work of architecture was to be built. Again, they found that the work of politicians necessitated that equality of treatment of all the individuals who made up the nation—that impartiality which was necessary to do justice all round. They found also the necessity of utility in the work of politicians no less than in the work of architects. They found, probably, the politician of to-day very much hampered and harassed by the thousand-and-one necessities and claims of modern life; and these the politician had to reconcile as best he could, and frame laws which would be equitable to all. The architect had also to deal with the requirements of the multitudinous bodies dealing more or less with building—he would not say with architecture—and he had to reconcile these with the many and varied and difficult matters which were brought before him by his clients; and in reconciling these he had to give evidence of a skill and manipulation, of fitting one thing in with another, which was sometimes paralleled by the modern politician. Then in the fact that architecture contributed in some small way to the adornment and amenities of life by making our cities more beautiful, and by making the homes of the people comfortable and more attractive—so also the work of the politician had for its aim and object the advancement of the human race. In coupling with the toast the name of Lord Saye and Sele, he hoped to hear from the responder some words, not as a professional politician, but as an amateur critic of architecture, in which he had probably displayed as keen and lively an interest as in the work done on the Embankment.

LORD SAYE AND SELE, responding in a humorous speech, reminded the company that Lord Milner was "billed" to respond for this toast, and that he (the

speaker) was only called in at the last moment as a sort of "locum tenens." Under these circumstances, although he took the greatest interest in architecture, at this short notice he must decline the invitation of the last speaker, and would refrain from inflicting upon them anything in the nature of an architectural speech. Perhaps it was a little brutal to ask a member of the House of Lords to respond for the House of Commons. He did not wish the latter august assembly any harm, but at the same time if a bargee cruising down the Thames could stop by the Terrace of the House of Commons and take all the members away for a year's holiday he did not think any harm would be done, and in saying that he thought he had responded for the House of Commons. As regards the House of Lords, there must be some good in that body, for a great poet once wanted to describe Mr. Roosevelt, and amongst the attributes with which he wished to endow him he referred to those of two noble Lords as follows:—

"A touch of Lord Cromer, but only a touch;
A touch of Lord Curzon, but not very much;
A mixture of Bismarck and Emperor Will,
Of Nelson, Napoleon, and Buffalo Bill!"

THE PRESIDENT, proposing the toast of "The Lord Mayor, the Sheriffs, and the Corporation of the City of London," said that this was a toast which was always received with enthusiasm in gatherings of that sort, and the reason was that we regard our Lord Mayor and the Corporation, not merely with esteem, but with feelings of affection. He could no more imagine London going on without the Lord Mayor and the Corporation than he could imagine London going on without the Bank of England. But when we considered the age of these institutions, compared with the Lord Mayor the Bank was but a thing of yesterday. He had recently looked into this matter of the institution of the Lord Mayor, and found that in the twelfth century the citizens of London set up a Lord Mayor of their own, but unfortunately for them they lived in the reign of Richard Cœur-de-Lion, and he on his return from Palestine, stamped on what they had done, and that was the end of their efforts for a time. But fifteen years after—in the year 1215, when Magna Charta was established—the citizens of London established their right to their Mayor, and the courage and independence which they showed then had been the keynote of the history of the Empire and of the Corporation of London ever since. It was sometimes said that these great institutions were a sort of close affair, but that was miles off the mark, for the office of Lord Mayor was one of the most democratic in the world because it was reached by means of a progressive series of elections; and if they looked back on the history of the past they would find that a spirit of independence always actuated them. In the eighteenth century, for example, when the great Lord Chatham was ejected unscrupulously from office, the City replied by conferring on him the freedom of the City. A few years after, when John Wilkes was active, and a systematic prosecution was organised against him, he was made Sheriff of London; and those of them who had enjoyed the hospitality of the Mansion House would recollect that fine gold cup, the Oliver Cup, which commemorated a very spirited resistance on the part of the City authorities to the aggression of the House of Commons. He had referred to the hospitality of the City of London, but there was another form of hospitality, on a finer scale—namely, the hospitality dispensed by the work of the Lord

Mayor and the Corporation in public life. On all great occasions of sorrow and rejoicing, on all great national questions and movements of the day, they looked to the Lord Mayor to help them, and the hospitality of the Mansion House was never denied to any worthy cause. He thought that that hospitality—the permission which was given by the Lord Mayor for the use of the Mansion House on these great occasions—was symbolical of the relation of the Lord Mayor, not only to the citizens of London, but to the wider circle of his fellow-countrymen. The Institute was also fortunate in having as guests some of the representatives of the great City Companies so intimately connected with the Corporation of London. Here, again, they had the same sagacious application of a great tradition to modern conditions. These City Companies, started originally to protect and develop specific industries, had advanced far beyond that point: they employed their resources for all worthy charities and educational causes, and this, he thought, was the source of their permanent vitality, of the high place they occupied in the esteem not only of Londoners but of all thoughtful men who studied the facts of the case. He had the pleasure of coupling with the toast the name of the Lord Mayor himself, and as all of them were acquainted with the admirable qualities of the Lord Mayor and the efficient way in which he discharged the duties of his office, he (the speaker) need make no attempt to paint the lily. He had had the pleasure of being present at meetings when Sir David Burnett presided, and had observed that he always showed great sagacity and shrewdness and had an extraordinary knack of hitting the nail on the head. The efforts he had made to preserve to the citizens of London the Crystal Palace was one instance amongst many of the single-minded and highly disinterested sense of duty which inspired the Lord Mayor, the Sheriffs and the Corporation of London in the discharge of the duties of their high office. He therefore had much pleasure in proposing the toast, coupled with the name of Sir David Burnett.

THE LORD MAYOR, in responding, said that the President had very justly said that the Corporation which he (the speaker) had the honour to represent was a very ancient body, perhaps the most ancient in the kingdom—the mother of corporations, with old traditions which were preserved to this day, and with quaint ceremonies which did not in any way detract from the efficient discharge of their work as a municipal authority. The President had rightly observed that the Corporation of London was the most democratic municipal institution in the Empire. The members were elected annually, and he and all other Lord Mayors before reaching the position which he occupied that evening, had to fight many contested elections as Common Councillor, as Alderman, and as Sheriff. The municipal work of the Corporation was exceedingly well and efficiently performed, and he was glad to be able to testify that that quality was by no means limited to the City of London, for municipal work throughout the country at the present time was most ably performed. Wherever one went in any part of the kingdom one found that the municipal authorities were doing all in their power to improve their cities and towns. Slums were disappearing, and were being replaced by healthy dwellings and broad streets; old thoroughfares were being improved and buildings were being erected, healthy, convenient, and beautiful to the eye. And the City of London, he was glad to recognise, owed much to

the architects, not only because they had beautified our streets and public buildings, but also because of the utilitarian part of their work. By their ability and skill in economising space and providing convenient arrangements, they had largely increased the rateable value of property; and he could say, for the encouragement of his architect friends, that there was no question that there would be great scope for the architect in the future because of the way he added to the welfare of the people by beautifying their towns and residences. The President had very kindly made some personal references to him (the speaker). He could only say that he realised to the fullest extent, and intended to maintain to the utmost of his ability, the dignity and traditions of his office, and he should utilise to the utmost the many opportunities which that office afforded for useful public work. The President had also referred to the Mansion House as being the home of charity, philanthropy, education, and other works for the betterment of the people; and as there were so many Masters of Livery Companies present that evening, he should like to say that it was one of the greatest comforts to a Lord Mayor to know that in times of urgency, and when the need and the cause were great, he could always rely on the support and help of the Livery Companies. The President had also referred to the Crystal Palace. Now architects, of all people in the world, were the men to realise the importance of open spaces for a city like London. He was old enough to remember the time when one could take a radius of three miles from the Bank of England or Charing Cross and get comparative country. That radius had been extended and enlarged to eight miles—and who could speak of the future? And who could speak of what our predecessors had done for us—Hyde Park, Epping Forest, Burnham Beeches, Tooting Bec Common, and so on, all preserved for the people? That was a debt we owed to our predecessors, and the only way we could repay that debt was by having a like regard for the future. It would be a lasting reproach to the men of to-day if they allowed the Crystal Palace site to be covered by miserable small dwellings. The magnificent park of over 200 acres, every day becoming closer to London, and with a Tube which, he could state on good authority, would be extended to the Crystal Palace in the near future, would be of enormous advantage to the poorer classes of the people. He felt confident that the Crystal Palace with the aid of friends would be preserved for the use of the people for all time.

The Rev. S. A. DONALDSON, D.D., Vice-Chancellor of the University of Cambridge, then proposed the toast of "Architecture and the Sister Arts." He said it was with no small feelings of trepidation that he rose in response to the President's commands to propose what he might suppose, notwithstanding what had already been said, was the toast of the evening. He could wish that some one else had undertaken that duty, but he felt bound when asked to say "Yes," and for many reasons which he hoped would be indicated before he sat down he had great pleasure in doing so. He was asked to propose the toast of "Architecture and the Sister Arts"—a tolerably wide range to cover. What was architecture? If they went back only as far as Plato and Aristotle they found that architecture was the Queen of Arts, the mistress of the arts—he supposed they must not say the master art—because the other arts could not do without her. He would take another definition of architecture: possibly some of them remembered a very remarkable

address given by William Morris more than thirty years ago on "The Prospects of Architecture in Civilisation." In that lecture Morris defined architecture as "the art of building nobly and ornamentally." Again, Morris defined it as the "union of the arts, mutually helpful and harmoniously subordinate one to another," and he went on to say: "The practice of this art is one of the most important things which man can turn his hand to." Or let him take another definition, given by Sir Sidney Colvin, viz. that architecture is a shaping art, the function of which was to express and arouse emotions by the combination of order and decorative mass. It was obvious that architecture was one of the most important arts that one could possibly have to do with. They would remember that beautiful song of Goethe's which Carlyle translated, and which Froude told us that he carried about with him to the end of his life. The song was in these words as translated:—

The mason's ways are a type of existence, and
his persistence
Is as the days are of men in this world.
The future hides in it gladness and sorrow.
We press still thorough,
Naught that abides in it daunting us, onward.
Here eyes do regard you in Eternity's stillness;
Here is all fullness,
Ye brave, to reward you:
Work and despair not.

That, he thought, was the motto of all true workers, and that was the motto which he ventured to suggest to those who had that great work in hand in building the new Delhi. He had also to propose the sister arts. What were they? Might he venture to include not only the obvious, painting and sculpture, but also poetry and music? Did not architecture combine in it music and poetry? When we look at St. Mark's, Venice, did we not feel it, and, if he might say so, when we were in the presence of the magnificent Taj Mahal was it not the same? ("No.") He was sorry he had to differ from the gentlemen who said no. He should have thought the order and harmony of those buildings suggested music and poetry. At all events, he should like to include poetry and music as well as sculpture and painting amongst the sister arts which we had to commemorate now. From any point of view we could not exaggerate the importance of the art of architecture, and at Cambridge they recognised that when they elected as their Slade Professor of Fine Arts an Architect, viz. Mr. Edward Prior, who was devoting himself heart and soul to the establishment of their newest study, the science and art of architecture. Mr. Prior was throwing himself with enthusiasm into this work, and in the course of his inaugural lecture the term before last he said:—

To sum up: Our school of architectural studies proposes the broadest elementary teaching. To this end it must sincerely specialise in the direction of a working theory. It should teach artistic skill from the very outset by setting the student to draw and model and see others drawing and modelling. It should keep to the chief materials of constructive art, such as are of practical use to-day and such as the student can see in use in Cambridge. It should teach historical art—not at large, but with strict reference to the creative periods, and with strict reference to the structural invention out of which the artistic creations grew.

Those were the lines on which Mr. Prior was founding the new School of Architecture, and he ventured to think that they were broad enough, liberal enough, and wise enough to satisfy even the most stringent critics amongst architects. They ventured to think at Cam-

bridge that the student there could study many different styles of architecture on the spot: some he might disapprove of, in others he might find much to please him. But, besides that, they hoped that this new school was going to make itself felt even in the Royal Institute of British Architects, and it was a great joy to him to receive these words from a prominent member of the Institute: "We all look to the time when the Cambridge School of Architecture will become one of the most important in the country." They were grateful for those words, and at Cambridge they liked to think so too. Last Saturday the Senate decided that a site should be assigned for the new School of Architecture, and that was the first step, and from that step they could go forward with high ideals. Their scheme of instruction aimed high, and it was intended that the opportunities offered at Cambridge should be very thorough and very varied for the training of young men. He should like to give them a brief sketch of what their schedule of study was. It was drawn up very largely by a member of the Institute to whom the Senate owed a very deep debt of gratitude indeed, for he could not say what they would have done without the help of Professor Beresford Pite. Well, this was the schedule for the examination in architectural studies. There were two parts. Part I. consists (giving only the headings) of Practical Mechanics, Elementary Mechanics, Strength of Materials, Construction and Elementary Design, and Architectural Drawing and Surveying. Part II. consists of Outlines of the General History of Art, including Architecture; Classical Architecture and the Allied Arts; Mediæval Architecture and the Allied Arts; Oriental Architecture and the Allied Arts; Renaissance and Modern Architecture, ending up with the Theory of Art in Relation to Architecture. That was the Schedule, and before a man could enter he was supposed to have taken honours in the Mathematical or Applied Mechanics or History Tripos. Then the idea was that a student should go up to London for two years and then back to Cambridge for a time, and it was hoped eventually to establish a Diploma in Architecture: but nothing was settled about that yet. They were not going to be satisfied with less than the ideal of William Morris; they wished to foster the Mechanical, the Intelligent, and the Imaginative sides of men, as Morris desiderated so earnestly. They wished their men to be not only artists but artisans, not only artisans but artists; and with that object in view they hoped that they might, with the kind help of the R.I.B.A., put their school on a satisfactory basis. Of course they wanted money. The City had been extraordinarily good already to the University of Cambridge: the Drapers', the Goldsmiths' and other Companies had been most kind and helpful. There must be many of those present who were actively interested in architecture, and if they felt inclined to help in fostering this study at Cambridge their assistance would be heartily welcomed. Architecture was nothing if it lost the religious side, and with that in view he should like to read part of a poem called "A Dedication," by Rudyard Kipling:—

If there be good in that I wrought,
Thy hand compelled it, Master mine;
Where I have failed to meet Thy thought
I know, through Thee, the blame is mine.

Who lest all thought of Eden fade
Bring'st Eden to the craftsman's brain,
Godlike to muse o'er his own trade,
And manlike stand with God again.

One stone the more swings to her place
In that dread temple of Thy worth—
It is enough that through Thy grace
I saw naught common on Thy earth.

With the toast he wished to couple the name of one, Sir William Richmond, than whom he could conceive of nobody more fitted to answer to it, the name of one who was famous both for his father's sake and for his own, of one whom he himself held in especial admiration and respect on account of the magnificent portrait which hung in Trinity College Hall of his Master, Brooke Foss Westcott, Bishop of Durham. And, of course, they all knew how Sir William had devoted his energies, his talents, and zeal to bringing together the arts of painting and architecture in St. Paul's Cathedral. He had great pleasure in proposing the toast of "Architecture and the Sister Arts," coupled with the name of Sir William Richmond.

Sir WILLIAM RICHMOND, K.C.B., R.A. [*Hon. A.*], in reply said that if it was difficult for the previous speaker to propose the toast, it was still more difficult for him to respond. First of all, what the previous speaker said was quite indisputable: Architecture was the mistress art. First surely there came the cave, then there came a little prehistoric gentleman who scratched a relief upon the walls of the cave, and afterwards a little painter came with his box of colours and coloured the design. Therefore the sequence surely was perfectly just: Architecture, Sculpture, and Painting. Now they had to commemorate, chiefly, but not entirely, the efforts which English architects had made from generation to generation, not only in this vast city, but over the whole of England, and they had to take cognisance of their numerous difficulties, the numerous pitfalls into which they might fall. But there had been one pitfall into which as yet they had not fallen, but he saw it in the future, and that was when the noble art of architecture became a subject for discussion in journalism. As long as they were able to keep clear of that, their souls they might count to be their own, but directly that miserable institution the penman began to scribble about them they might find it very difficult to sleep in their beds pleasantly. But he was asked to respond for Sculpture and Painting—and, he supposed, the allied arts. He supposed that none of the arts had progressed more definitely or more clearly in this country in recent years than the art of sculpture. It was very greatly to be regretted that in the Royal Academy they had not space enough to show that progress year by year as it ought to be shown to the public, and he thought that he would be voicing the opinion of the distinguished President of the Royal Sculpture Society, Sir George Frampton, and Sir Thomas Brock and other distinguished members of the sculptor's profession, if he expressed the hope that before long they should find it possible to organise an exhibition, perhaps not yearly, but every now and then, of the sculpture which England produces and could produce. Of painting it was difficult for him to pronounce an opinion: many distinguished painters were present that evening who were also Associates of the Royal Institute of British Architects, and he could not but think that the art of painting, taken generally, was not nearly so low down in the mire as it was made out to be by sections of the press. He thought that upon the walls of the Royal Academy and elsewhere there was much to be proud of. It might be that we were just now undergoing a period of change: we

had not quite passed out of the old, and had not quite got into the new, but the Royal Academy was conservative enough not to jump to the conclusion that the old was all bosh and that the new contained the only soul to be saved, and that was the force and strength of their institution. Perhaps of all other things what he desired most was a closer union between the three arts, a closer union not only in theory but in practice, and he thought that the Royal Institute of British Architects had gone a long way to establish that union by receiving as its Associates many sculptors and many painters. That surely was a sign that they were going to join together and not have separate interests. The main interest was the interest of art, not the interests of societies or sects, and the more in his opinion they could coalesce and thrash out amongst themselves the enormously difficult problems which must always be presented when the three arts were brought together, the greater chance there would be of a consolidated union of the three arts, which would be of enormous benefit to the country. They had all observed—probably many of them had read—a recent little warfare that had taken place between the penmen and the brushmen in the columns of the *Morning Post*. In his opinion, not because he was a brushman, because he was a little bit of a penman too, but in his opinion the brushmen had knocked the penmen into a cocked hat: they had exposed their prejudices and also—not in one instance only—their wilful inaccuracy. In the long run the architect, be he builder, as he ought to be, and must be, and the sculptor, be he designer or carver, and the painter painting upon walls or canvas, would “arrive” when the penman had got no more to say. He thanked them for the kind allusions which had been made to him, and for the graceful way in which they had listened to him in his effort to respond for the three arts.

THE LORD MAYOR asked leave to interpolate a toast which was not on the programme—viz. the health of their President, Mr. Blomfield. The applause he heard was far more eloquent than any speech he could make. In fact, a speech was not required, because everyone knew their President's distinguished career at Oxford, his able writings upon architecture, and the fact that he would shortly be the recipient of His Majesty's Gold Medal for the Promotion of Architecture. If more were needed, the fact that the President occupied the premier position in the profession would be sufficient evidence that by his great ability he had achieved a position which he worthily fulfilled for the benefit of the profession. They were fully assured that Mr. Blomfield's occupancy of the Presidential Chair of the Institute was of the greatest advantage to the Institute and for the benefit of art in general. On behalf of his fellow guests he should like to say that they very much appreciated the hospitality which had been shown them by the President, and, far above that, the kindly and charming personal character of Mr. Blomfield. They earnestly hoped that for many years he would be spared to look back upon his occupancy of the Presidential Chair as one of the most pleasurable periods of his life, and that he might have good health to place his great abilities at the disposal of the profession for their benefit in particular, and also for the benefit of the people.

The toast having been received with musical honours,

THE PRESIDENT, in reply, said that this was entirely an extra turn and had taken him completely unawares. He thought he had done his little part and might enjoy

himself for the rest of the evening. But he could say that the very kind words of the Lord Mayor gave him the greatest pleasure: it was a compliment he did not in the least expect. He thought it spoke volumes for the organising power of members of the Institute that although when they began to sing “For he's a jolly good fellow” they began in fifteen different keys, they all got together before they knew where they were, and continued with a most harmonious result! The Lord Mayor was good enough to express many kind remarks, and the company had been good enough to reciprocate them. The position he (the speaker) occupied was one of the greatest distinctions an architect could hope to occupy. The post was in the nature of a trusteeship, and they had in the Institute a great many extremely difficult problems to handle, but he was glad to say that in handling these problems he had the advantage of working with an extraordinarily industrious and capable Council. The kind of work a man did sometimes depended on the men he worked with, and he (the speaker) was very fortunate. The Lord Mayor had touched the right note: what they were there to do—he (the President), in his ephemeral capacity, the Council in theirs, the Institute in its position of trustees for the future—was to promote the great art of architecture, which they protected and hoped to influence. And on that note he left it, except to thank them heartily and sincerely for the welcome they had given him. It was a great pleasure to know that he had their support and sympathy in the enterprises they had in hand.

Mr. J. A. GORTCH, F.S.A. [F.], in proposing the last toast, that of “Our Guests,” said he had to couple with it the name of that distinguished scientist, Sir A. Geikie, President of the Royal Society. There was one claim which he could make for any architect worthy of the name—a claim which he was sure no one there would care to repudiate. Give them a piece of stone of reasonable antiquity—say not more than 900 years old—on which the hand of man had set a character, either by mouldings or carvings, and they would be able to tell the date within a few years. He challenged any architect there to rise and repudiate that claim. And if they were asked they could tell in a few terse words the history of those who saw the stone wrought, the dress they wore, the way they talked, the way they made love and performed the other duties of life. But Sir A. Geikie could do far more than this: he could see further into a stone wall than any architect. He could resolve that stone into its component parts; his eye could pierce the mud whose infinitesimal particles gradually hardened into that stone, of whose history the architect could but read the last few chapters. The architect's archaeological lore sank into insignificance before the marvellous insight of the geologist. It was to this magician that he asked them to drink, and to their other guests, men who walked on the highest altitudes of the numerous interests which compose human life—art, science, literature, commerce, and even that activity which more and more increased the happiness of the public—viz. local government.

Sir ARCHIBALD GEIKIE, K.C.B., F.R.S., President of the Royal Society, in reply said he had to thank them for himself and on the part of his fellow-guests for their hospitality and for the very pleasant evening which had been afforded them. He did not pretend to see an inch further into a stone wall than anyone else, but no one could walk along the streets of London now without

seeing a great many stones in walls, houses, and shops that he could not have seen thirty or forty years ago. He did not know any town or city which had made more extraordinary advance in its architecture within his own recollection, and that recollection went back to between sixty and seventy years. Slums had been cleared away, and, though some picturesque places had been regretfully removed, there could be no doubt whatever that the streets of London, thanks to the genius of our architects, had been enormously improved. There had been a remarkable use of ornamental stone in the exterior of our buildings, and this was quite novel and modern, and added a great deal to the beauty of our streets. He should like to give his architectural friends one word of advice as to employing any stone for exterior purposes that was full of carbonate of lime. They should not use an ordinary limestone, and on no account should they use white marble. Some years ago he had occasion to investigate the behaviour of white marble in towns where there was plenty of acid in the rain, and he found that no inscription on white marble would be legible for more than a century: in many cases it was illegible before that. Not only was the inscription effaced, but the effect of the acid was to swell the marble, and it cracked. People in the eighteenth century built slabs of white marble in some hard stone frame that prevented the marble expanding, but the force of the expansion cracked the stone vertically, sometimes horizontally, and when that happened the rate of demolition of the stone was greatly accelerated. "Do not use white marble in any building which is exposed to the acid of London," was his advice to them.

During the evening a programme of music was excellently rendered by the Misses George and Bartle and Mr. Frank Webster, accompanied at the piano by Mr. Wm. Emerson.

Proposed Architects' Defence Fund.

At the Business General Meeting last Monday, Mr. Edmund Wimperis [F.], in accordance with notice, moved the following resolution:—

"That the Board of Professional Defence be instructed forthwith to prepare a detailed Scheme for the creation of a Fund for Mutual Aid and Advice (Legal) for members of the Institute as necessity may arise."

Mr. WIMPERIS said he hoped the resolution would commend itself to the feeling of the meeting, and, more than that, to the feeling of the whole body of members. It might seem to be a little unnecessary for an Institute such as theirs, founded in the year 1834, and increasing every year in importance and in its hold on popular opinion and popular imagination, to be thinking at this late hour about the creation of a body such as he was suggesting. In the Charter granted to them in 1837 the aims of the Institute were briefly described as being "the advancement of civil architecture"; and for this purpose various powers were given to its Council. But it was held at the present day that the Charter and the powers it conferred did not go so far as to enable the Council to spend or to risk the funds of the Institute for the professional defence of any member, or to take up the cudgels on his behalf if he were improperly attacked in the course of his professional duties, no matter how

satisfactorily they might be performed, or what principle vital to their profession might be concerned. What was required, then, was an outside body, a body which should operate not by virtue of the Charter of the Institute, but which should be so closely allied as to have the Institute force, the Institute *morale*, at its back, so as to be able to operate in the future with the best advice and consideration that the President and Council and members could give. Such a body would have an immense force in the Courts of this country when taking up the cudgels on behalf of a member unfairly attacked. Since the notice was given of this resolution he had taken the trouble to find out what other societies had done in this way. The nearest analogy was represented by the Medical Defence Union. This body, which existed on a voluntary subscription, formed an excellent model on which they could base the creation of an agency such as that contemplated. If the feeling of members was favourable to the proposal, he would suggest that the simplest method of giving it shape was to refer the matter to the Board of Professional Defence, empowering them to take advice so as to put it on a sound basis, and to report to the Council as to the best way to adapt the machinery to the needs of the profession. This would give the Institute a hold over the profession which it did not now possess. Men who might not be attracted by the feeling that the Institute could give them anything in the way of professional status, or who cared little for those other objects connected with the advancement of civil architecture on which they set value, might be attracted to the Institute by those closer motives of self-preservation and self-interest which, after all, must be in the minds of every practising architect. If he might say so, the Board of Professional Defence had been one of his disappointments in life. He started that body as an Associate Member of Council, and it was started with an object which it had taken five years or more for him to realise was not in the power of the Board to secure. The limitations which the Council saw fit to impose upon the Board's action and authority robbed it of most of the power he had hoped it would possess, and he realised that, however much the Council might be in sympathy with any action the Board suggested, the Council was powerless to put one foot forward for the object they were now aiming at. He was out that evening to try and get the thing done which the Institute at present could not do, and to get it done in the best possible way and with the least possible delay. The details, he thought, might very well be left to whatever tribunal they considered best to report further to the Council. All he asked was that the meeting should say—and he hoped it would be unanimous in saying—that in some form the Institute should add this weapon to its armoury, so that in future if one of their members was grossly and unfairly attacked, the advisory body, which the Institute already had in its Board of Professional Defence, should go through the case and decide that it was one in which the Institute could properly take action; then the Institute would have means of taking action, and be able to go into Court in defence of their own brethren. He would leave it at that, and he hoped others would fill in the rude and rough skeleton, and that they should see flesh on its bones before very long.

Mr. K. GAMMELL [A.], in seconding the resolution, expressed his regret that it had not been raised before. Seeing the length of time that the medical profession, which was a much more powerful and wealthy organisa-

tion and profession than their own, had had, he believed, two societies for the defence of its members, it was not very creditable that the architectural profession should have lagged so far behind. They had at any rate made a start that evening, and he hoped, as Mr. Wimperis said, that in a short time they would have an organisation of such strength and power that when the defence of a member was undertaken it would, at any rate, arrest a tendency on the part of a certain type of client to pillory an architect. From his own experience, and from careful observation for some considerable time, he had come to the conclusion that there was a particular type of client who made a point of victimising architects, and especially the younger architect. He thought that, granted an organisation such as Mr. Wimperis had outlined, that type of case which was too often reported in the professional Press would, if it did not altogether cease, at any rate appear on much rarer occasions. Mr. Wimperis had more or less taken the wind out of his (the speaker's) sails that evening, but there were one or two points on which he felt keenly about that Mr. Wimperis had not mentioned. When, on his election to the Council last year, it was suggested that he should serve on the Board of Professional Defence, he accepted the invitation with the greatest pleasure, because he thought it might lie to his hand to help in some measure some brother architect in distress. Equally with Mr. Wimperis he attended conscientiously every meeting of the Board, and in every case brought forward the fullest sympathies were extended to the particular gentleman seeking advice, yet they were met by the insurmountable barrier of the Charter. The result was that he went to Mr. Wimperis, who he knew had had this matter at heart for a very long time, and said, "If you do not bring this to a head by raising it at a General Meeting, I shall do so, but I suggest that you being an older man it is your duty." Mr. Wimperis agreed to bring this resolution forward, and he (Mr. Gammell) undertook to second it. Mr. Wimperis seemed to anticipate some opposition to this proposal, but he did not see how there could be any opposition. But much as he thought that the meeting would agree that there was very great need for an organisation of this kind, still it did not blind him to the fact that the matter needed to be approached in the proper way. He believed he was not doing another body an injustice when he said that with regard to the two societies for the defence of medical men there was in the public mind a feeling that directly a medical man was attacked there was a tendency to fly for relief and assistance to one or other of these societies. It would be a bad day for architecture—and by that he meant professional architecture—if for one instant the general public got it into its head that when an architect was attacked in his private professional capacity, he would instantly call in the aid of some powerful organisation such as he hoped they should some day possess, because, as they knew, architecture relied upon the good feeling and business amity which existed between the public and the architect. Therefore he hoped it would be made abundantly clear to every man who joined this association, should it be formed, that on no account whatsoever must the functions of the Society be warped or twisted so that it became an engine for coercion or, might he say, terrorism. He did not think he was altogether tilting at windmills, because he had been speaking to one or two people with regard to the medical societies, and there was a feeling that medical men were

prone to put what should be their own personal burden on the shoulders of a rich and powerful organisation. There was another matter which it seemed to him they wanted safeguards against, and that was with regard to what he would term the "death-bed repentance" type of man, one who having studiously kept aloof from the association, but, finding himself faced with the possibility of an action, made haste at the last moment to subscribe to its funds and seek the privileges of its membership. There should be some safeguard to prevent that. Another point which needed careful consideration was the necessity of ensuring a thoroughly sound fighting fund before the first case was undertaken—a fund not only sufficient to fight a possible first case, but also a possible appeal, or even appeals. Otherwise at the very first venture they might see an excellent organisation made entirely bankrupt, and many years would elapse before it could be resuscitated into anything like useful activity. One other point—not exactly of criticism, but the expression of a hope on his part—viz., that one of the first duties of an association of this kind would be to try to correct the misapprehension which existed in the public mind, and also in the minds of some of his Majesty's Judges, as to the functions of an architect, what his duties and responsibilities are. He had heard men whose opinion he valued say that they had been astonished time after time at the extraordinary ruling of Judges in cases which had come before the Courts, and they believed that had the case been put in a better way such and such a judgment would not have been given. He had taken this to mean that had funds been available for the right counsel to be engaged and the case prepared in a proper manner, a very different ruling might have been obtained, to the advantage of the profession as a whole. In conclusion he should like to say that his chief reason for so heartily supporting Mr. Wimperis's suggestion was because it seemed to him it was not "playing cricket" for them as a profession to allow a state of things to continue whereby their fellow architect had to take upon himself all the mental worry and distress of mind and the expense of fighting a case which if decided in his favour was of the very greatest assistance to the profession at large. It was not playing the game to let him go on taking all the hard knocks while they sat down and shared the spoils, and yet provided nothing of the sinews of war. He hoped if this association were formed, every member of the Institute would join, and then they would be able to feel that in standing shoulder to shoulder with a brother who was unjustly attacked they were buttressing themselves. That was his reason for venturing the remark that he did not think Mr. Wimperis was altogether justified in fearing opposition. He believed members of the Institute were as sporting as the President himself, and that they would no longer be a party to this *laissez-faire* policy of allowing a brother member to take the hard blows while they themselves took the spoils when he won his case. He hoped to see this association called into being. And if that should come about, and some day he could recollect that in his small way—and he was sure Mr. Wimperis shared those feelings—he had aided in setting on foot a strong organisation to defend their members when unjustly attacked, he should feel he had not been altogether unworthy of the trust reposed in him.

Mr. MAURICE B. ADAMS [F.J.] while expressing himself entirely in favour of the resolution, said he thought it desirable that they should understand the position of

these medical societies. He did not think there was anything in what Mr. Gammell had said with regard to the medical societies bolstering up questionable cases, because, as far as his memory served him, whenever cases of that kind had been taken up he thought they were amply justified. It was doubtful whether the medical profession could be said to take up every partial story which was brought before them. But there was this to be said in regard to subscriptions. The medical men did not pay a subscription such as architects paid. When once doctors got their qualification they were entitled to all the privileges of their Society, and were not called upon to pay four guineas a year to maintain it. Once a member always a member. Therefore they could afford to pay, and expected to pay very liberally, to any Defence Fund of this kind. He entirely agreed that their Charter would not permit the Institute to do other than what the Council had decided. A subscription would therefore be necessary, but it should be fixed at rather a small amount. He did not think they should expect the rank and file throughout the profession in a matter of this kind, in addition to their subscription as members of the Institute, to support this organisation if a large subscription were fixed upon. The most deplorable thing about the whole business was that whenever a cruel case against one of their brethren was in the Courts some member of the Institute would always be found ready to give evidence against him. Men who did that sort of thing should not feel that they could come there and enjoy good fellowship with them as if they had been doing an honourable and straightforward piece of business. If architects held together Judges would not come to such contrary opinions. It was bad enough to have a technical case like a building case whittled through the hands of counsel who did not really understand it. If all the witnesses came forward and spoke impartially as they should do, stating the whole truth and nothing but the truth, he felt sure that it would have a wholesome effect upon the Judges and the public. They ought to support a man when he was in distress provided he had not been guilty of culpable negligence. There were things which a man might do, probably with the best intentions, but which were foolish; he did not say they could support an architect like that. But when an architect and the builders had done their best there should be but one voice about it. If they always acted on that principle he was sure they would get justice in the Courts. Mr. Wimperis and Mr. Gammell had put their case very fairly and properly, and he hoped the meeting would support the resolution. If the proposal took the shape of some moderate sort of subscription being expected there could be no doubt that members would respond. A spoke, however, should be put into the wheel of those gentlemen who for a few guineas seemed to be willing to swear to anything.

Mr. GEORGE HUBBARD, F.S.A. [F.], said that a man's strength might be measured by his powers of resistance, and this power of resistance might be enormously increased if the members of the Institute could, under certain conditions, receive the support of such a fund as was proposed. If the members of the Institute were actuated by an *esprit de corps* there should be no difficulty in raising such a fund. They had in the Institute over 800 Fellows, and double that number of Associates, and over 2,000 Licentiates, in all some 4,500 members. If half that number subscribed a

guinea a year, a war fund of over £2,000 a year would accumulate.

The PRESIDENT, in a few remarks at this point, explained the position of the Council and of the Board of Professional Defence in regard to the proposal before the Meeting, and pointed out that though cases of vital principle might arise in which it would be the duty of the Institute to take action, such cases would probably be very rare, and that where in the opinion of the Council the questions at issue were questions of fact, the Institute would not be justified in interposing. Having expressed his personal sympathy with the resolution, the President strongly supported what had been said by previous speakers as to the *esprit de corps* which should exist in the profession if its members were to command the respect and esteem of the public.

Mr. DELISSA JOSEPH [F.] said that no one could have listened to the preceding speeches without a sense of keen satisfaction at the motive at the back of the minds of those who had brought this proposal before the meeting. But, coming to the subject anew, one asked oneself whether it would be possible to amend the Charter, at some favourable opportunity, so as to give the Institute that power of intervention which it has been found that it does not at present possess. Doubtless that would be a costly and protracted procedure, and it could only be referred to in passing. But until the opportunity did present itself for amending the Charter so as to allow the Institute to fight cases of principle on behalf of its members, obviously the proposition put forward was the right one to meet present needs. One would have liked to have heard more from the proposers as to the machinery they proposed setting up. There was in existence a Board of Professional Defence, which was powerless when it came to taking active measures, and the proposition was that a fund should be raised so that it could be drawn upon in cases recommended, he assumed, by the Board of Professional Defence as suitable cases to fight.

The PRESIDENT: The Board of Professional Defence would be instructed to prepare a detailed scheme.

Mr. DELISSA JOSEPH, continuing, said it would have been interesting to hear what was in the minds of the proposers as to how their scheme was to be carried out, because if it was to be a fund external to the Institute organisation, there might be one or two difficulties. There might be a difficulty in the Board of Professional Defence appointed by the Institute administering a fund which was external to the Institute. And there might be a greater difficulty in using the machinery of the Institute for raising such a fund. One would like to see an attempt made not to leave this question entirely to voluntary effort. If it were left to voluntary effort it might happen, as so often did happen, that a few public-spirited men would support the fund, and the larger number of members might not feel disposed to support it and might not see the necessity of it. He would like to have heard whether it was contemplated to intimate that it was expected that every person allied to the Institute should, within his means and inclination, support the fund. Otherwise the fund would be inadequate to deal with important cases. One knew how rapidly funds disappeared in litigation, and unless a substantial amount was brought together by a large area of support among generous donors, among the Fellows, Associates, and Licentiates, the fund might be inadequate when the critical moment arose for it to be drawn upon. He gathered that the

feeling had been gradually growing up that something should be done to meet the case of defending members of the Institute who desired to fight matters of principle but who might not be able to afford time or means, or might feel the want of the moral support of their fellow members. There was no doubt that, apart from the question of funds, moral support of an action by its being defended by an institution or by an off-shoot of an institution such as this would be untold, and would have the effect on the public mind such as the work of corresponding organisations in the medical profession had. If the public did get the idea that men of the architectural profession were inclined to go to their defence fund to help them fight unjust cases, surely it would strengthen rather than weaken the position of the architect in dealing with his client. But there was one point which should be clearly defined, and they might ask the proposers to lay down a broad principle in regard thereto. He assumed that it was not intended that the fund should be drawn upon in the case of small disputes between incompetent men and their clients, or that those who had no business habits should employ the fund for the purpose of adjusting their differences. It should be clearly laid down that only matters of high principle, of leading principle, should have any claim to demand the support of the Defence Board and the funds under its control. There was one thing which he could not help feeling was a grave hardship in the pursuit of work like theirs: architects had often to experience not only lack of appreciation on the part of the public, and to submit to an inadequate basis of remuneration, but occasionally to put up with a heavy burden of undue responsibility, and anything which could be done to relieve that sense of undue responsibility must be cordially welcomed by every thinking man.

Mr. WIMPERIS thanked Mr. Joseph for his cordial support and for his pertinent criticisms as to the very broad way in which this question had been put forward. With regard to the fund, they had first of all a comparatively large body of men in the Institute, men of public spirit, men who had been fortunate in the practice of their profession, who would look upon this fund as a means for helping their less fortunate brethren, and would be willing, apart from an annual subscription, to put themselves down as guarantors for a certain amount, so that no case which was undertaken at an early stage of the existence of the fund should suffer for want of adequate means. That he thought was a certainty. The fund would have to depend on an annual subscription; but what would it amount to? When one considered the small amount which would be required as an insurance premium—for that was how he looked at it—against the risks one ran day after day in the conduct of one's practice, he thought it would be agreed that it was worth paying over and over again. Apart from that, there was the question of donations, and he hoped no one would look upon it as a personal allusion when he said that there was also the possibility of legacies. An old cousin of his, very much interested in the Institute, had upset his relatives because he left £1,000 as a legacy to the Institute for founding some sort of a Prize Fund! The Institute Prize Fund was not a bad one, and when he (the speaker) died he should hope to leave something, not to add more inducements to young men to enter a profession for which they were unfitted, but for the

well-being and protection of those who were in it and who were fitted to follow it. Therefore, so far as the funds were concerned he had no misgivings. If the Institute said *Fiat*, he was not afraid it would be *non possumus* for want of money. The other questions Mr. Joseph raised would have to be carefully safeguarded, and that was why the resolution had been put in the terms in which it was, because his view was that they already had advisory machinery for applying such funds as they contemplated raising. The Board of Professional Defence was appointed by the Council not from its own body, but composed of any members of the profession whom the Council thought would give valuable assistance on the Board. And it was an honorary body, which in itself implied much. He thought that if this Fund were in existence it would be considered an honourable position to be on the Board of Professional Defence, because it would mean that members would devote time, trouble, and consideration, and give of their best voluntarily and gratuitously, for the benefit of their professional brethren. This *esprit de corps* would give to the Board in the future a position of honour which it could not have at present, and which he believed the best men in the profession would esteem very highly. And that Board, or any other agency taking the place of it, would naturally have representatives on it nominated and appointed by subscribers to the fund. Those who found the sinews of war and paid the piper must have something to do with calling the tune. That again, he thought, would be beneficial. With regard to fighting fruitless cases, the Board of Professional Defence, or whatever Board was appointed, would sift cases, and decide upon those which had claims for support. For those which they considered had no claim on the fund they would advise the plaintiff or the defendant to cease the action. That would do good because it would stop cases going into Court which could only result in injury to the profession. As to the broader details of the fund, he would not touch upon those on the present occasion.

THE PRESIDENT: You will be advised on that by the Board.

Mr. WIMPERIS: If we can accept the principle, the details must come up later, in a form which the Institute considers suitable.

Mr. W. HENRY WHITE [F.], speaking in support of the resolution, referred to the number of cases which had come before the Practice Committee and the Council during the past few years, and the great hardship which these cases had brought on the architect—in one case practically resulting in the death of the architect, and in another case subjecting the widow of the architect to very grievous loss—as showing the necessity that existed for steps to be taken in the direction indicated.

Mr. MAX CLARKE [F.] pointed out that though the Board had not done anything in a monetary way they had given very good advice and had assisted in other ways. He asked Mr. Wimperis whether, as this was a very large matter, and embraced very wide official questions, he did not think it would be advisable for the Board of Professional Defence to be given power to add to their numbers in considering the matter. Much consideration would be needed as to how the money should be dealt with when they got it—because of course they would get it; the only question was how much. As he said a fortnight ago, he was entirely

in sympathy with the idea; the strange thing was that they did not think of it before. Mr. Wimperis's great regret was that he did not bring it forward five years ago. If it had been started then, they would have had many thousands of pounds by this time which they could have expended upon deserving cases. No one had in mind to scatter money about in going to law for people who were to be dealt with as they deserved; they would only act in cases where the man had good grounds to fight upon, but no money to fight with. There was another point which should be most strongly emphasised: that the Board of Professional Defence might bring it before members that they should have a little more *esprit de corps*, and should refrain from giving evidence in the Law Courts against a fellow architect merely for the sake of a lucrative fee. It was too appalling for words, and he could not understand its being done. He sympathised most sincerely with the resolution, and hoped it would be passed with unanimity.

Mr. BISHOP: Do the Council say that the money of the Institute cannot be spent on these cases, or have they taken counsel's opinion on the question?

The PRESIDENT: It was self-evident to the Council that the Institute's money could not be spent in this way. But if that suggestion is made our legal advisers' opinion will be taken on it.

The resolution was then put from the Chair and carried unanimously.

Mr. GAMMELL: Mr. Max Clarke made a proposal that the Board of Professional Defence should have power to add to its members. Does that require seconding?

The PRESIDENT: That is a matter for the Council, and will not be lost sight of.

The Safety of St. Paul's: Further Report by Sir Francis Fox.

The Dean and Chapter of St. Paul's Cathedral have received from Sir Francis Fox a further report on the fabric of the Cathedral, and a committee of experts has been appointed to consider the question. Meanwhile, work on the buttresses and main piers is steadily proceeding. Sir Francis Fox's first report [see JOURNAL R.I.B.A. 11th January, 1913] was directed chiefly to showing the danger of the tramway scheme, which was afterwards abandoned. In this further report Sir Francis says:—

All excavations in connexion with building operations in the vicinity of the Cathedral demand attention. These excavations are important causes for the serious movements which have taken place along the south side of the Cathedral, particularly of the south portico, which was cracked, and to which massive tie-rods have been fixed. Portions of this portico had to be taken down some ten years ago and rebuilt.

Peat under Cathedral.—I also hand you herewith a copy of one of the three borings which were made in the year 1907, this one being in the north aisle of the choir on the floor of the crypt. This drawing shows that the bottom of these foundations is 4 feet 6 inches below crypt floor; that at a total depth of 5 feet 6 inches, or 1 foot below foundation, a bed of peat was reached 12 inches in thickness. . . .

Plumbing of the Dome and Walls.—This operation has been carried out on several occasions, with the result that they are found to be out of truth in different places, gene-

rally in a south-westerly direction. The amount of divergence would be negligible were the fabric at rest and the core of the walls and piers intact, but, although the movement is not in itself serious at present, still it is imperative that it should be stopped, otherwise it is only a question of time when danger will be reached.

Cracks in the Main Piers.—In consequence of the tilting of the eight main piers of the dome, due to the excessive and unequally distributed pressure on the foundations, these piers in places have been seriously cracked and require attention.

Buttresses to the Drum of the Dome.—These are 32 in number, of which 23 are cracked, those to the south-west being very seriously disintegrated. In the case of No. 1, when a lantern was held on one side of the buttress (which is 4 feet 6 inches in thickness) the light could be seen from the other side. I find that these buttresses have only a facing of ashlar, the inside being apparently small rubble thrown in more or less loosely. Both the outer and inner walls of the drum itself are also cracked, and have been pointed up in years gone by.

South Transept.—Serious cracks have occurred in these walls, and some ten years ago the heavy iron tie-rods, already referred to, were fixed to overcome the motion. This, however, continues, as is proved by numerous "live" cracks in the cement "tell-tales" which are being fixed in many parts of the Cathedral; some of these which have been put in position for only a month are already cracked.

Foundations.—To excavate down to these is naturally a subject for much hesitation, for fear of further disturbing the equilibrium of the Cathedral, but I am informed that they are generally 4 feet 6 inches below the crypt floor, the bottom of the wall at the east end being considerably lower.

I have been furnished with a drawing (copy appended) giving the depth of the foundation of the south transept, and also of the buildings erected a few years since at the side of Godliman Street.

From this and other drawings it will be observed that the excavation for these buildings was 12 feet below the footings of the Cathedral, and we know from records that they were in quicksand, and that pumping was going on. The sand, having once been disturbed, continues to move slowly away, probably on the outside of the deep sewer.

The Cathedral, although standing immediately, as I am informed, on pot earth, gravel, and sand, is underlain by wet sand and gravel (the level of water depending, more or less, on the rainfall), for a depth of about 5 feet to 6 feet above the London clay. The strata of wet sand and gravel constitute an unreliable and unstable condition of affairs which requires a remedy.

The Broad Sanctuary, Westminster.

The Bill to empower the Governors of Westminster Hospital to sell the site of the Institution in Broad Sanctuary and to acquire lands for the erection of a new hospital, was considered on Thursday by the Committee of the House of Commons on Unopposed Bills. Mr. Cripps, Parliamentary Agent, stated that the opposition of the London County Council had been withdrawn, a plan having been agreed upon between them and the Hospital Authorities. That plan provided for throwing certain portions of the site into the public streets. By clause 10, the Office of Works were to have complete control over the building and the site. Sir John Wolfe Barry produced the plan, and stated that the portions of the site thrown into the public streets would have the effect of widening Broad Sanctuary from 63 ft. to 70 ft., and

Prince's Street from 33 ft. to 40 ft. The site, he said, had not yet been sold. The Committee passed the Bill, and it was ordered to be reported to the House for third reading.

Ancient Monuments Consolidation and Amendment Bill 1913.

On 28th May this Bill passed through the Committee stage in the House of Lords. Several of its clauses were amended. The more important alterations were as follows: the Commissioners of Works' right of purchase was restored; the Ancient Monuments Board has been given the right of entry with or without seven days' notice to any important monument that is believed to be in danger; the petitioner against the Bill confirming a Preservation Order may have his costs awarded him by the Committee on the Bill; the right of pre-emption under a Preservation Order has been cut out; the power of the Commissioners of Works to give advice and to superintend work in connection with monuments under a Preservation Order has been enlarged to include, on invitation by its owner, any ancient monument; and Ecclesiastical Buildings in use for ecclesiastical purposes have been removed entirely from the scope of the Bill, and dwelling-houses, except such as are occupied by a caretaker, from scheduled monuments and the consequential requirement of permission to make alterations. Lord Beauchamp, in addition to further amendments, promised that the subsection against the demolition or removal of any scheduled monument should be strengthened, and announced that the remission of death duties on ancient monuments should and probably would be part of the Finance Bill.—W. J. DAVIES [A.].

Conservation of Carnarvon Castle.

As a result of the skilled and vigilant restoration which has been in progress at Carnarvon Castle for the last few years, not only has a large part of the building already been made secure against decay for years to come, but the dignity and beauty of the whole structure are far more clearly displayed than has probably been the case for at least two centuries. *The Times* of the 6th June had a special article dealing with the history of the Castle and describing the work of reconstruction and the discoveries which have been made during the process. The great hall and many other of the interior buildings vanished generations ago, but part of the work done during the past two years has been to trace the foundations and to carry them up to the present ground level by a narrower course of stonework. The foundations of the kitchens, butteries, and some other buildings have also been brought to light, so that by this means and the aid of a large plan erected within the gateway a good idea can now be gained by the visitor of the internal arrangements. Excavations near the Eagle Tower—the westernmost tower of the

castle, facing the Menai Strait—have uncovered chambers, provided with arrow-slits, at a depth of from 18 to 20 feet below the present level of the ground. Between the inner and outer baileys the foundations have been opened up of piers and walls which clearly framed the portcullis forming the inner line of defence. Both stonework and ironwork show the care which has been taken to harmonise the recent repairs with the ancient structure. The coping of the parapet is being built of the same coarse sandstone conglomerate which was used in the original work, the old quarry having been discovered on the opposite shore of the Menai Strait. In the same way, where the builders used limestone, the same stone has been brought from the original quarry, also discovered in Anglesey. Describing the great oak roof, *The Times* says:—

The problem of restoring the roof was one of great difficulty and interest. The indications provided by the surviving brackets and corbels seemed at first confused and contradictory. On four sides of the great decagonal chamber which occupies most of the width of the tower there are two pairs of protruding stone supports, "undoubtedly the springers of two mighty arches," which would have intersected, and probably supported a high conical roof. There is no other evidence for the construction, or indeed the existence, of this roof; if it was part of the Edwardian building, in Henry VIII.'s repairs it was evidently superseded by a very different structure. The evidence for the subsequent roof consists of an opposed pair of corbels, clearly meant to support the brackets for a roof truss, and lines of old corbels under the roof on six sides of the decagon. There were also corbels on the other four sides, and it was not till these proved on examination to be modern that the construction of Henry VIII.'s roof became apparent. It has now been restored with as much fidelity as possible, the work being made to correspond to every indication remaining. For the main beam a huge stick of unseasoned Quebec oak, 44 feet long and weighing about four tons, was hoisted into place on the walls. As the old corbels for the supporting struts were decayed, they were overlaid with a pad of indiarubber, new corbels were inserted above them, and the struts supported on these. From the main beam rafters were fixed to the old corbels on six sides of the decagon. For the two sides on which the beam rested, and the two next to them, naturally no rafters were required, and the modern corbels were removed. A truss roof has been completed, following an existing model of about the same date, and the outside covered with sheet-lead. The floors were inserted by the same careful interpretation of the existing evidence, but proved a simpler task. The reconstructed chambers are extraordinarily dignified and pleasing, and add immensely to the interest of the site. Their decagonal form combines with the rather low roofs to give a great sense of space, and even comfort, while the huge proportions of the roof in the upper chamber produce an impression of massive craftsmanship which must be congenial to the shades of the ancient builders.

... Reinforced by modern art, the durable limestone and sandstone of the ancient and most recent builders can be made practically indestructible, and the magnificent fortress of Carnarvon is being handed on to posterity with its security established and its interest greatly enhanced.

Commendatore Boni's Excavations in the Palatine.

Commendatore Boni [*Hon. Corr. M.*], Director of the Excavations of the Forum in Rome, de-

livered a most interesting lecture on Tuesday afternoon in the large theatre at King's College, London University, on "The Houses of the Republican Period now discovered under the Palace of Domitian." The following is from *The Times* account of the lecture:—

On the top of the Palatine Hill, commanding a view so fine that, as the lecturer said, it was very difficult to concentrate on work there, lie the ruins of the Emperor's palace, rebuilt in the first century, after the palace had been destroyed by fire in the reign of Titus. Commendatore Boni said that the splendid site of the palace convinced him that it must have been occupied in the days of the Republic by the *domi* of the great patrician families, and that by excavating still deeper it would be possible to investigate below the palace to the age of primitive occupation. Acting upon this conclusion, and using to some extent the cuttings made in 1721 by the Duke of Parma in his search for marble, he came upon a drain of Nero's time, and following this up found the *piscina*, the compartments which Nero had filled with salt water for the preservation of fish. By this Neronian wall he came upon the ruins of a Republican house of about 50 B.C. The walls were decorated with designs which were of great beauty, though little can now be seen, in which the rich purple, the *murex*, predominated. Commendatore Boni threw upon the screen the drawings made in 1721 when the Farnesi cut through the house, and then the originals as they now are. The designs are of great variety and illustrate scenes from the siege of Troy, from the *Electra* of Sophocles, with a picture of the eagle hovering as the emblem of Jupiter over the tomb of Agamemnon, and of Neidæ seen through water, like figures in a dream. The originals of all the drawings have not yet been discovered, but the lecturer was hopeful that as the work proceeded more would come to light.

Under the throne room, the palaces of Domitian, Nero, and Caligula were found all to have cut through the threshold of a house of the late Republican era; one of the rooms was brilliantly decorated in green and red, showing the love of colour, but no marble from Africa and elsewhere had yet been imported at this date. Under the centre of the Imperial palace, assisted by the Farnesi cuttings, the excavators have penetrated to the original Palatine layer, in which Commendatore Boni hopes on his return to Rome to discover primitive buildings. Here also, under the centre of the *atrium* and under the Republican house, corridors, granaries, and refuges of all kinds have been found in the rock itself. These are beautifully plastered and extend a long way, and though it has been impossible yet to determine the date of their construction, the houses superimposed give a definite clue to the date at which they were abandoned. In these have been discovered animals and figures modelled in clay and terra-cotta by the *palette* of some artist, among them being the form of a supercilious camel. Under the *triclinium*, one metre down, traces were found of the original *triclinium*, exquisitely decorated with green and red porphyry. Another most interesting discovery has been that of three vertical shafts, 5 feet in diameter, leading down for 120 feet to the room where were the engines, cogwheels turned by capstans, for supplying the water for the fountains. "I rejoice in finding things for which there are no texts," was the lecturer's comment. Finally, slides were shown of an important series of illustrations of the *Iliad*, in a house possibly built by Augustus for Claudia, since a column bearing the inscription of Tiberius Claudius was found. "Stones which should not be met by people who don't want to alter their views of things," was Commendatore Boni's phrase; and to the new light which is being thrown by the great work now going on under the palace of Domitian both the Italian Ambassador and Professor Ernest Gardner, who proposed and seconded the vote of thanks at the conclusion

of the lecture, bore hearty testimony. In reply, Commendatore Boni spoke of the great responsibility resting upon him and the welcome he was prepared to give to any archaeologist who should visit him.

Minimum Salaries and Cost of Living in India.

The Secretary has received the following note as to the cost of living in India from a member of the Institute practising in that country: "The cost of living generally in India has much increased during the last few years, especially in the larger towns. Rents are abnormal—in Bombay, for instance, the monthly rent of a small flat is from 200 rupees. The minimum salary on which a married man can make ends meet is 550 rupees a month, and no unmarried man should come out on less than 400 rupees."

Thames-Side, temp. James I.

Mr. Culling Gaze writes with reference to the review of his book, *On and Along the Thames, James I.*, in the last number of the JOURNAL:—"Mr. Walter Spiers' remarks about footnotes are just, perhaps, from a student's point of view. My aim was to interest the many, and I gather from my experience that the general reader dislikes footnotes, and this work would have required so many that the text would have been nearly smothered. I purposely avoided this by referring to my authority in the text as often as possible, and for any studious reader desiring to read deeper into the period I have given a full list of works consulted. It should also be remembered that this is only a section of a comprehensive history of the Thames and its shores; and I tried to make this clear in the Preface. Regarding Sir Philip Herbert, mentioned on page 129, he, the following year (1605), was created Earl of Montgomery (p. 131), and as there was already at the time a very prominent Earl of Pembroke, it would have been confusing to mix them."

THE EXAMINATIONS.

The Final: Alternative Problems in Design.

The Board of Architectural Education have approved the designs submitted as Testimonies of Study under the new regulations by the under-mentioned Students:—

Subject VII.—Design for a Village Inn.

W. R. Davison.

James E. Marchinton.

B. Donaldson.

C. Medley.

A. E. Lowes.

Subject VIII.—Design for a Gatehouse to a College.

P. J. Adams.

A. E. Lowes.

G. Bennett.

J. Moore.

J. W. Bull.

A. Nisbet.

J. O. Cheadle.

E. B. Norris.

H. T. Cooksey.

A. J. Sparrow.

A. L. Freaker.

J. O. Thompson.

W. W. Locke.

W. C. Young.

R. M. Love.

Subject VIII.—Design for Carriage Entrance to Hotel.

F. A. Addey.	J. E. Lutyens.
C. O. Ap-Gruffydd.	J. MacGregor.
H. Bagenal.	H. L. MacMillan.
Philip D. Bennett.	E. A. L. Martyn.
R. Brain.	H. C. Mason.
A. S. Burnett.	B. Newbould.
E. R. F. Cole.	R. H. Philp.
E. C. Davies.	C. J. Ripley.
W. R. Davison.	A. R. Shipley.
H. Dicksee.	A. E. Stott.
L. Foster.	H. J. Tebbutt.
J. C. Fowell.	R. S. Wallace.
W. Friskin.	R. A. Walter.
W. Griffiths.	B. N. Weeks.
H. W. Hallas.	F. Williamson.
L. S. Henshall.	R. S. Wilshire.
A. F. Hooper.	J. F. Wilson.
A. F. Kaltenbach.	

ARCHITECTURAL EDUCATION.

THERE is at the present time a serious need for full and open discussion on the subject of Architectural Education, and to this Mr. H. C. Corlette, in his article on Education and Tradition in Architecture, which appeared in the JOURNAL for 31st May 1913, has made an extremely useful contribution. Articles on the subject appear from time to time in our technical journals, some full of sound reasoning, others, perhaps, loaded with fallacies and misunderstandings, but all apparently more or less ignored by the general body of architects. A number of our leading architects are giving up a considerable amount of time to the subject, but, while we see some of the results of their deliberations, the arguments on which these results are based rarely pass the doors of the committee room.

Occasionally is heard the cry that something is wrong, and some desperate effort is made to put it right, but some of us have busy offices and are quite satisfied with the existing state of things, while most of the others are busily engaged in the effort to get busy offices. Almost all, in fact, are so absorbed in the everyday affairs of life that they have little time, and perhaps less inclination, for philosophic thought about present-day tendencies in architecture and architectural education. At such a time Mr. Corlette's stimulating article is particularly welcome.

Mr. Corlette pleads for a climax to our system of architectural education, and one sincerely hopes that the R.A. School will gradually be recognised as occupying this important position. For such a school to be satisfactory, its entrance examination should be about on the level of the R.I.B.A. Final Examination in technical subjects, and a high standard of non-technical education should also be required. The school, in fact, should be one which would attract students who have obtained a Degree or Diploma at one of the University Schools of Architecture, and who have passed the R.I.B.A. Final.

Mr. Corlette refers to the Board of Architectural Education as a possible link connecting the various schools. As a link this Board needs strengthening. This could easily be done, to the advantage, I firmly believe, of all concerned, by making the head of each recognised school a full member of the Board and by reintroducing the old system of sending Visitors from the Board to the schools. At the same time the Board might well relax the present condition for exemption—that the external examiner shall not be a Professor of Architecture—which is rather a remarkable proposition to put before a university.

Mr. Corlette rightly attaches considerable importance to the study of the Principles of Architecture. The inclusion of this subject in the R.I.B.A. Final Examination was surely one of the finest educational moves made by the Institute. It was abandoned recently. In my work at Sheffield I find this subject one of the most important in the curriculum.

I am convinced, too, that the importance of studying "old buildings before trying to design new ones" cannot be over-estimated. Some years ago Vacation Courses were instituted here, and attendance at a certain number of them was made compulsory for candidates for our Certificate and Diploma. In this way our students must spend from eight to twenty-two weeks studying buildings under proper guidance in such places as Oxford, Cambridge, London, Lincoln, Stamford, and Bath.

There is also much truth in Mr. Corlette's statement that "we try too soon to produce without first storing our minds with the raw materials of production." There is a tendency nowadays to measure the value of a scheme of architectural education by the shortness of the time which elapses between the starting of the course by a schoolboy and his completion of a "design" for some vast building. To what extent the student understands the planning and construction of the building, or its suitability to its purpose and environment, seems of little moment. If, on the other hand, one endeavours to build up a scheme of architectural education in which due importance is attached to each essential subject, while progress may be slower, it is more sure and more real.

Mr. Corlette also deals with the importance of studying complete buildings, and here I imagine most of those interested in architectural education will agree with him. The old notion, for instance, of drawing examples of the "orders" as though they were geometrical patterns is gradually giving way to the consideration of the "orders" as parts of buildings, buildings used for definite purposes and in a definite environment. "Let us not blind ourselves to the great principles which may be studied in every traditional school." This surely indicates the proper approach to the study of the history of architecture. It is not fashionable nowadays to study mediæval work, but we cannot

afford to ignore the lessons which may be learnt from it. It is perhaps worth noting that in studying the architecture of the past we should observe not only what was well done, but also what errors should be avoided. Pope's satires on some of the mistakes of the English Renaissance are repeated in almost every book which deals with that period in the history of architecture. Their soundness is not denied, but far too little attention seems to be paid to them, and we continue to make the same mistakes.

I have referred to the need for full discussion on the subject of architectural education, and I would particularly plead for this with regard to specialisation and non-technical education. The Institute Examinations are now highly specialised, and specialised in a manner which seems to me to bear no proper relation to any system of specialisation which ought to obtain in the practice of architecture. I feel sure also that we have not realised the importance of non-technical education to the extent to which it is realised elsewhere. In striving to obtain fine results we are spending our time and energy in the search for "short cuts." Some day we shall realise that these do not lead to the desired goal, and that, while art will remain long, the duration of life is not increased by a system of desperate sprints in early years.

W. S. PURCHON [A.].

Sheffield University: 5th June 1913.

Honours for Members.

At the Senate House at Cambridge last Wednesday, Dr. Donaldson, the Vice-Chancellor, presiding, honorary degrees were conferred upon the following members of the Institute:—

The degree of LL.D. upon Mr. J. S. Sargent, R.A. [Hon. A.], who, in the words of the Public Orator, "had by his genius conferred immortality upon so many of the famous men who had received the honorary degrees of the University, and among them upon that most learned of architects, Francis Penrose." Mr. Penrose's portrait here referred to was painted for the Institute, and is one of its most cherished possessions.

The degree of Litt.D. upon Commendatore Giacomo Boni [Hon. Corr. M.], Director of the Excavations of the Roman Forum.

The degree of Litt.D. was also conferred upon Mr. Thomas Hardy, O.M., who, fifty-one years ago, was awarded the R.I.B.A. Silver Medal for an Essay on "The Application of Timber Work in England, constructively and artistically, from the year 1400 to the present time," submitted under the motto "Labour, Observation, Thought." "An essay," reported the judges, "showing considerable care and labour, but without any particular research into the scientific and statistical portion of the subject."

Dr. John J. Burnet, A.R.S.A. [F.], has received the distinguished honour of election as Corresponding Member of the Institute of France.

MINUTES. XV.

At the Fifteenth General Meeting (Business) of the Session 1912-13, held Monday, 9th June 1913, at 8 p.m.—Present: Mr. Reginald Blomfield, A.R.A., *President*, in the Chair; 19 Fellows (including 8 members of the Council), 16 Associates (including 2 members of the Council), and 1 Licentiate—the Minutes of the Meeting held 26th May 1913, having been printed in the *JOURNAL*, were taken as read and signed as correct.

Kenneth Dalgleish [A.], attending for the first time since his election, was formally admitted by the President.

Mr. E. Guy Dawber, *Vice-President*, announced the receipt of a number of books presented to the Library, and a cordial vote of thanks was passed to the donors.

The Secretary read the Reports of the Scrutineers giving the results of the Annual Elections as follows:—

*To the Chairman of the General Business Meeting,
Monday, 9th June 1913,—*

The Scrutineers appointed to count the votes for the Election of the Council and Standing Committees for the Session 1913-14 beg to report that 668 envelopes were received—259 from Fellows, 404 from Associates, and 5 from Hon. Associates. The result of the election is as follows:—

The following being unopposed are all duly elected:

PRESIDENT.—Reginald Blomfield, A.R.A. (unopposed).
PAST PRESIDENTS.—Thomas Edward Colcutt; Leonard Stokes (unopposed).

VICE-PRESIDENTS.—Alfred William Stephens Cross; George Hubbard; Henry Vaughan Lanchester; Ernest Newton (unopposed).

HON. SECRETARY.—Edward Guy Dawber (unopposed).

(Signed) C. H. BRODIE, *Chairman of Scrutineers*.

REPRESENTATIVES OF ALLIED SOCIETIES.—The following being unopposed are all duly elected:—John Brooke, Manchester; G. Hastwell Grayson, Liverpool; Arthur H. Hind, Leicester; William Milburn, Newcastle; Albert E. Murray, Dublin; George H. Oatley, Bristol; Alexander N. Paterson, Glasgow; Ernest E. R. Sutton, Nottingham; A. F. Watson, Sheffield (unopposed).

REPRESENTATIVE OF THE ARCHITECTURAL ASSOCIATION. William Curtis Green (unopposed).

HONORARY AUDITORS.—John Hudson; William Henry Burt (unopposed).

(Signed) C. H. BRODIE, *Chairman of Scrutineers*.

MEMBERS OF COUNCIL.—Fellows.—Elected: H. T. Hare, 491 votes; G. C. Horsley, 478; Walter Cave, 448; H. D. Searles-Wood, 446; T. E. Cooper, 444; Wm. Woodward, 420; Arthur Keen, 399; E. A. Rickards, 397; W. J. Tapper, 395; E. W. Wimperis, 386; S. Perks, 386; C. S. Peach, 384; C. H. B. Quennell, 384; S. Warwick, 377; H. P. Adams, 358; W. A. Forsyth, 357; H. P. Burke Downing, 353; W. H. White, 345.

Not elected: A. E. Munby, 328 votes; H. W. Wills, 325; C. H. Reilly, 316; H. Chatfield Clarke, 301; F. R. Farrow, 272; J. Dixon Butler, 260; G. Hornblower, 251; S. P. Pick, 249; A. W. Brewill, 228; E. Greenop, 217.

666 papers were received, of which 13 were invalid.

(Signed) COURTENAY M. CRICKMER,

SYDNEY J. TATCHELL,

A. G. R. MACKENZIE,

PAGET L. BAXTER,

MAURICE S. ADAMS,

HAROLD I. MERRIMAN,

Scrutineers.

ASSOCIATE-MEMBERS OF COUNCIL.—Elected: R. Atkinson, 475 votes; S. K. Greenslade, 469; E. S. Hall, 361; E. Gunn, 341; G. L. Elkington, 283; K. Gammell, 279.

Not elected: W. R. Davidge, 275 votes; R. J.

Angel, 261; A. W. Papworth, 256; H. Shepherd, 199; C. A. L. Sutton, 166.

651 papers were received, of which 11 were invalid.

(Signed) GEORGE O. SCORER, } *Scrutineers.*
SIDNEY J. EDWARDS, }

ART STANDING COMMITTEE.—*Fellows.*—*Elected:* E. Guy Dawber, 537 votes; Halsey Ricardo, 515; J. A. Gotch, 497; H. V. Lanchester, 476; W. R. Lethaby, 476; Gerald Horsley, 455; Henry T. Hare, 453; Walter Tapper, 352; W. A. Forsyth, 350; H. H. Statham, 348.

Not elected: H. Burke Downing, 343 votes; C. H. B. Quennell, 301; Arthur Stratton, 280; C. Wontner Smith, 245; Mowbray Green, 235.

Associates.—*Elected:* Robert Atkinson, 550 votes; Sydney Greenslade, 530; Needham Wilson, 492; M. J. Dawson, 429; A. Wyatt Papworth, 420; P. E. Webb, 409.

Not elected: P. W. Lovell, 395 votes.

632 papers were received, of which 3 were invalid.

(Signed) GRANVILLE A. STREATFIELD, } *Scrutineers.*
PERCY P. COTTON, }
REGINALD H. SPALDING, }
WILLIAM BURT, }

LITERATURE STANDING COMMITTEE.—The following being unopposed are all duly elected:—

Fellows:—David Theodore Fyfe; David Barclay Niven; G. H. Fellowes Prynn; Harry Sirt; R. Phené Spiers; Charles Sydney Spooner; C. Harrison Townsend; Francis William Troup; Edward P. Warren; Paul Waterhouse (unopposed).

Associates:—Martin Shaw Briggs; Walter Millard; William Godfrey Newton; Horatio Porter; Charles Edward Sayer; William Henry Ward (unopposed).

(Signed) C. H. BRODIE, *Chairman of Scrutineers.*

PRACTICE STANDING COMMITTEE.—*Fellows.*—*Elected:* H. D. Searles Wood, 472 votes; W. Woodward, 446; Max Clarke, 433; G. Hubbard, 418; Saxon Snell, 387; Sydney Perks, 353; Matt. Garbutt, 344; W. H. White, 334; H. O. Cresswell, 282; E. Greenop, 278.

Not elected: J. Dixon Butler, 277 votes; C. E. Bateman, 263; John Hudson, 225; A. W. Moore, 216; H. A. Satchell, 216; F. T. W. Goldsmith, 155; E. R. Barrow, 125; F. W. Marks, 125; J. W. S. Burmester, 88; E. J. Gosling, 74.

Associates.—*Elected:* H. W. Cubitt, 502 votes; E. Gunn, 476; C. E. Hutchinson, 460; H. Shepherd, 442; P. M. Fraser, 409; K. Gammell, 394.

Not elected: H. A. Saul, 381 votes.

616 papers were received, of which 6 were invalid.

(Signed) F. DARE CLAPHAM, } *Scrutineers.*
H. CLIFFORD HOLLES, }
D. CHRISTIE MAYNARD, }
J. GUNTON, }
C. H. BRODIE, }

SCIENCE STANDING COMMITTEE.—*Fellows.*—*Elected:* Charles Stanley Peach, 531 votes; Bernard Dicksee, 523; Alan Edward Munby, 509; Ravenscroft Elsey Smith, 508; George Hornblower, 496; William Edward Vernon Crompton, 487; Alfred Conder, 470; Frederick Richard Farrow, 470; Robert Watson, 459; Ernest Flint, 456.

Not elected: Horace Gilbert, 444 votes.

Associates.—*Elected:* Robert John Angel, 390 votes; George Leonard Elkington, 361; William Robert Davidge, 356; Digby Lewis Solomon, 332; Ernest Alexander Young, 330; Charles John Marshall, 312.

Not elected: Edwin Richard Hewitt, 306 votes; John Hutton Markham, 295; Chas. Lovett Gill, 271; James Ernest Franck, 173.

619 papers were received, of which 8 were invalid.

(Signed) THOMAS S. BEE, } *Scrutineers.*
J. HERBERT BELFRAGE, }
R. HEATH MEW, }

The President declared the Officers, Council, and Stand-

ing Committees duly elected in accordance with the above Reports, and a hearty vote of thanks was accorded to the Scrutineers for their labours in connection with the elections.

The following candidates for membership were elected by show of hands under By-law 10:—

AS FELLOWS (15).

GAULD: William Edgar [A. 1895], Aberdeen.

GOSLETT: Alfred Harold [A. 1901].

REA: Kenneth Guscotte [A. 1907], Montreal.

ROSS: George Allen [A. 1904], Montreal.

NASH: William James [A. 1902], Neath.

Together with the following Licentiates who had passed the Examination qualifying for candidature as Fellows:—

BARNARD: Leonard William, Cheltenham.

BROWN: Herbert Harold, Manchester.

CROTHALL: Harry George.

GREENE: Clare Arnold Clayton, Sunderland.

HUNT: William, J.P., L.C.C.

HUNT: Edward Arthur.

LUCAS: William Louis, B.A. Cantab.

PARKER: Richard Barry, J.P.

SALMOND: David, Glasgow.

THEAKSTON: Ernest George.

AS ASSOCIATES (10).

BRAULT: Joseph Charles Gustave [Special], Montreal.

COPE: George Arnold [S. 1908].

COWLEY: Herbert Reginald, F.A.S.I. [Special].

DOGGART: Arthur Robert [Special], Montreal.

FOSTER: Francis Roland [S. 1898], Montreal.

HOUSTON: William Wylie [S. 1909], Belfast.

MARTYN: Laurence Dunmore [S. 1912].

TETLEY: Charles Reginald [Special], Montreal.

WALKER: Thomas [Special], Derby.

WILBY: Albert [S. 1907].

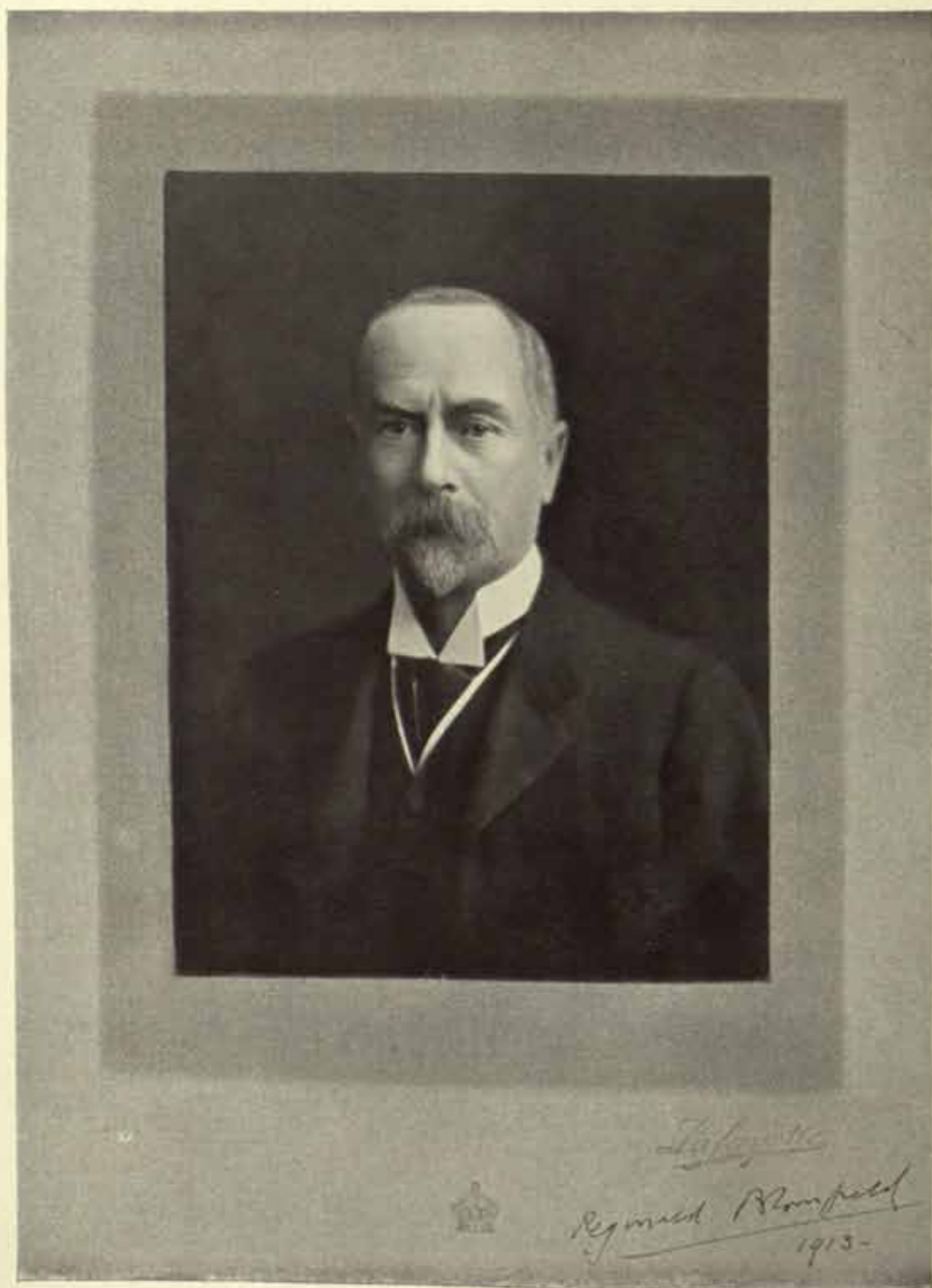
On the motion of Mr. Edmund Wimperis [F.], seconded by Mr. K. Gammell [A.], it was

RESOLVED, that the Board of Professional Defence be instructed forthwith to prepare a Detailed Scheme for the creation of a Fund for Mutual Aid and Advice (Legal) for members of the Institute as necessity may arise.

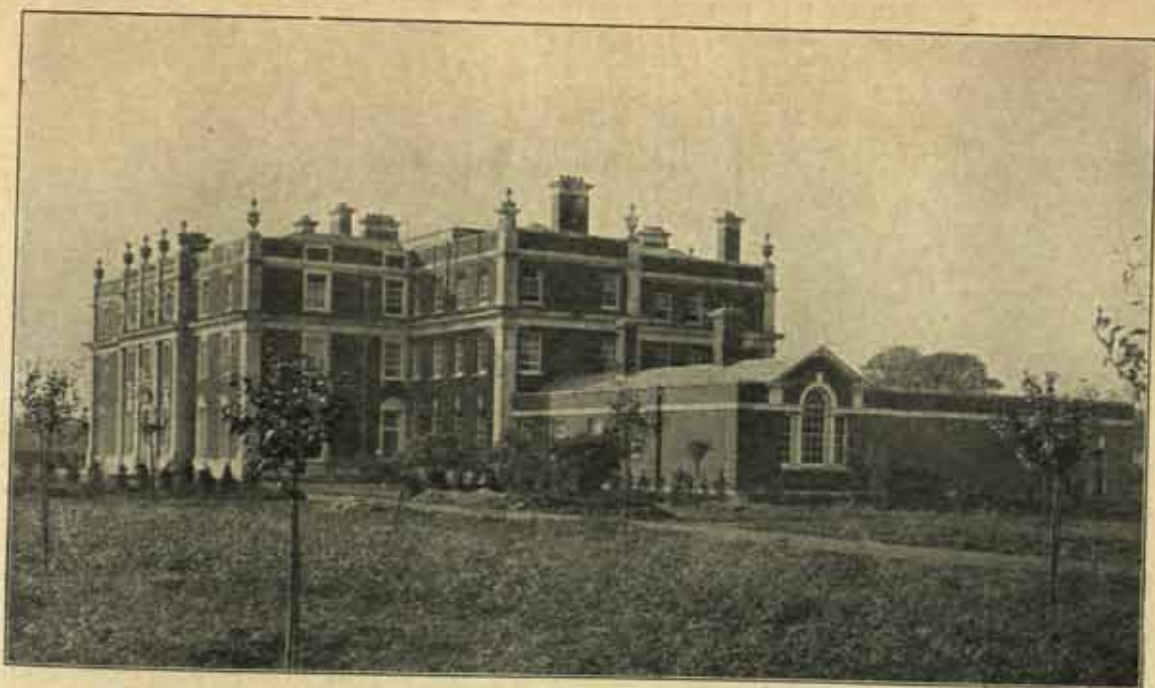
The proceedings then terminated, and the meeting separated at 9.30 p.m.

"The Architectural Review."—The illustrations in the June number of the *Architectural Review* include, besides a large number of smaller illustrations, a beautiful set of plates showing various views of M. Léon Ginain's charming building, the Musée Galliera, an interesting account of which and of its accomplished architect is contributed by Professor Jean Hébrard. A second set of plates illustrates some fine examples of eighteenth-century architecture in Brussels described by Mr. Patrick Abercrombie; and a third set various details of the beautiful work carried out by Sir Wm. Chambers at Carrington House, Whitehall (now, unhappily, demolished), illustrating an article on "Georgian Interior Decoration." Mr. Harry Sirt contributes an interesting record of "Eighteenth-Century Architects and Artists in Ireland," in which is noted the interesting fact that John Roberts (1712-1796), an architect of Waterford, who designed its Town Hall and other buildings, was the great-grandfather of Lord Roberts of Kandahar, Pretoria, and Waterford.

Erratum.—"Education and Tradition in Architecture" [JOURNAL, 31st May, pp. 520-523].—The author of this article, whose signature was accidentally omitted, is Mr. Hubert C. Corlette [F.].



REGINALD BLOMFIELD, A.R.A., F.S.A., President R.I.B.A.
Royal Gold Medallist 1913.



MOUNDSMEERE, BASINGSTOKE. (Reginald Blomfield, A.R.A., architect.)

(Photo, "Country Life.")

THE ROYAL GOLD MEDAL 1913.

Presentation to Mr. REGINALD BLOMFIELD, M.A.Oxon., A.R.A., F.S.A., Hon. Fellow of Exeter College, Oxford, Professor of Architecture at the Royal Academy, President of the Royal Institute of British Architects.

General Meeting (Ordinary), Monday, 23rd June 1913.

THE CHAIRMAN (Sir ERNEST GEORGE, A.R.A., Royal Gold Medallist, Past-President R.I.B.A.): My Lord, Ladies and Gentlemen,—The interesting function for which we are now gathered must not be presided over by our authorised Chairman, for it is our President's duty to-night to pay the penalty of greatness and to have honours thrust upon him. With the Royal Gold Medal for Architecture the recipient is unanimously elected by his fellow architects, and Reginald Blomfield probably feels with me that the esteem of his brother artists is the one thing that is worth having—honours and laudations without that are nothing worth. We architects are entrusted to select and recommend a name for Royal distinction, and our present choice has received the hearty approval of our Royal Patron. All who enjoy the friendship of our President are conscious of the high ideal that is always before him, whether in his architectural or literary work, or in his assiduous efforts on behalf of architectural education. I will leave my subject in better hands, requesting Lord Plymouth to perform the ceremony of investiture.

The Right Hon. the EARL OF PLYMOUTH, P.C. [*Hon. Fellow*]: Sir Ernest George, Ladies and Gentlemen, I am naturally very proud to have been asked to be your spokesman on the present occasion. As Sir Ernest George has reminded us, the Royal Gold Medal, with which in a few moments I shall have the honour of investing your President, is the gift of the King, bestowed on the recommendation of the members of the Royal Institute of British Architects.



LONDON, COUNTY, AND WESTMINSTER BANK, KING'S ROAD, CHELSEA.
(Reginald Blomfield, A.R.A., architect.)



UNITED UNIVERSITY CLUB, PALL MALL. (Reginald Blomfield, A.R.A., architect.) (Photo. Ernest Milner.)



ARMY AND NAVY STORES WAREHOUSE, GREYCOAT PLACE, WESTMINSTER.
(Reginald Blomfield, A.R.A., architect.)

(Photo. E. Decker.)

It is, I think I may say, the highest award that can be given, the most important recognition that can be won in the architectural profession throughout the British Empire, and Mr. Reginald Blomfield is about to join that small body of eminent men who in past years have been deemed worthy to receive this honour. It has been my good fortune to be associated rather closely with Mr. Blomfield on more than one occasion lately, and I have learned to appreciate his breadth of view, his knowledge, his wide sympathies, and the very high position he maintains as the representative of the great profession of architecture in England. I have had a happy feeling of security in these cases that if any responsibility rested upon me it would be he who would take the larger share. He will, I hope, forgive me for adding this personal note—namely, the very deep regard I feel for one who is so sensitive, as I know him to be, for the honour and repute of the great profession which he adorns. With regard to his achievements, apart from his architectural work: as you know, he has written much; he has written upon Renaissance Architecture, not only in this country but also in

France. He has written most ably upon the Formal Garden in England, and on other subjects relating to architecture, wherein the knowledge of his subject and his sound criticism are clothed in a literary style which makes these volumes no less delightful to the amateur than useful to the student. No one who has followed Mr. Blomfield's career from Haileybury, where he was educated, through Oxford University, at Exeter College—of which he is now an Honorary Fellow—can be surprised at this achievement, showing, as it does, the refining influence and the clear expression of the scholar. As to his works in stone and in brick, it would be presumptuous in me to attempt to review them in detail. They are necessarily more familiar to most of those present than they are to me. But I do know and admire not a few of them. We can all refresh our memories by examining the photographs and drawings displayed on these walls; and, so far as his work in architecture is concerned, I think it may be safely left to the judgment of all lovers of good architecture. I have now only to hand this Medal to Mr. Blomfield on behalf of every one in this room, and, doubtless, with the congratulations of many more outside it. I offer him our sincere congratulations, and on behalf of the very few in this room who are entitled to do so—if they will allow me the privilege—I venture to express their welcome to him most heartily amongst the elect who have received the highest award of merit that can be given in this country to the great profession of architecture, of which he is so distinguished an ornament.

* * * Following the usual custom, some details are appended of the Royal Gold Medallist's life and work:—

Mr. Blomfield was born in 1856, the son of the late Rev. G. J. Blomfield, Rector and Rural Dean of Aldington, Kent, and grandson of the late Dr. Blomfield, Bishop of London. He was educated at Haileybury (Exhibition), and Exeter College, Oxford (Scholar 1875), where he took a second in Classical Mods. and a first in Classical Greats. He is an Honorary Fellow of Exeter College. He received his professional training in the office of his uncle, the late Sir Arthur Blomfield, and was a student and prizeman of the Royal Academy Schools. He subsequently continued his studies in France, Spain, and Italy.

Mr. Blomfield has distinguished himself especially in domestic architecture and garden designs, adding many beautiful examples to the world-famed stately homes of England. Among them, to mention only a few, are Brocklesby Park, Lincs., residence of the Earl of Yarborough; Moundsmere Manor, Basingstoke; Wyphurst, Cranleigh, Surrey, for Sir Charles Chadwyck Healey, K.C.; Leasam, Rye, Sussex, for Admiral Sir George Warrender; Garnons, Hereford, for Sir John Cotterell; Apethorpe, Northants, for Mr. Leonard Brassey; Wittington, Marlow, for Lord Devonport; La Trinité, Jersey, for Mr. Athelstan Riley; Caythorpe, Lincolnshire, for Mr. Edgar Lubbock; Chequers Court, Bucks, for Mr. Arthur Lee, M.P.; Mellerstain, Kelso, N.B., for Colonel Lord Binning, &c. In other branches of architecture his work is represented in such diverse buildings as Lady Margaret Hall, Oxford; the United University Club, Pall Mall; Lincoln Library;

Lincoln Water Tower; Goldsmiths' College Extension, New Cross; the South African War Memorial, Haileybury; the Portsea Parish Institute; Branches of the London, County, and Westminster Bank in Glasshouse Street, Piccadilly, and King's Road, Chelsea; the Army and Navy Stores Warehouse, Greycoat Place, Westminster, &c.

Besides a large number of plans, photographs, and drawings of Mr. Blomfield's executed works, there were exhibited in the Meeting-room on Monday specimens of his talent in another phase of art: a series of beautiful pencil drawings, masterly in their handling, depicting charming French rural scenes dominated by some noble piece of architecture, cathedral, church, or château; and choice fragments of decorative carving, figure-sculpture, and other details, from Blois, Fontainebleau, and La Rochelle.

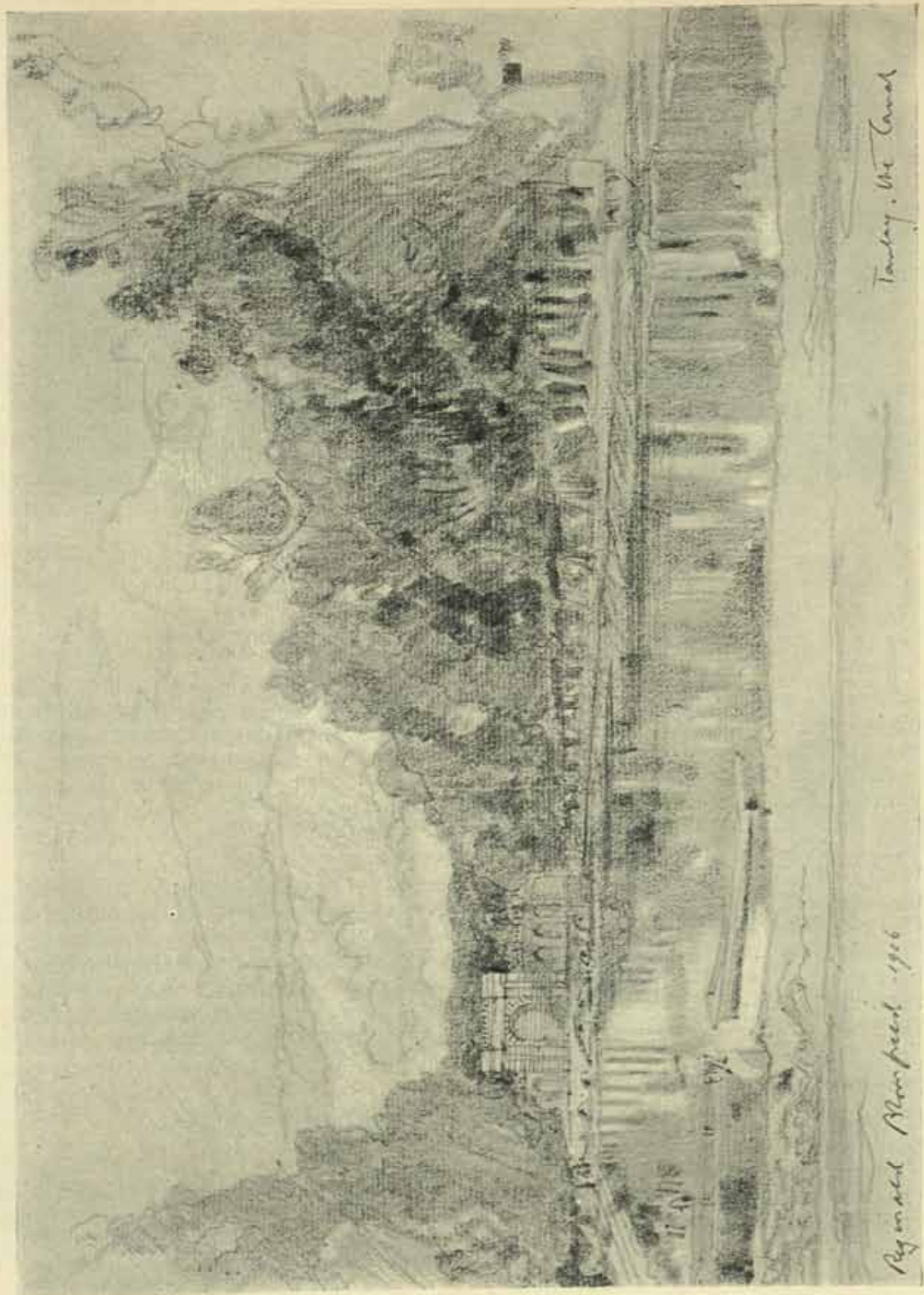
Mr. Blomfield is one of the leaders of the higher education movement that is having such a beneficial effect upon our architectural schools and training. The Board of Architectural Education, of which he was some time Chairman, owes much to his wise judgment, foresight, and sagacity.

Amid the stress of professional work he has found time to exercise his literary gifts, his published works including *The Formal Garden in England*, *The History of Renaissance Architecture in England*, *Studies in Architecture*, *The Mistress Art*, *A History of French Architecture from Charles VIII. to the death of Mazarin*, and *Architectural Drawing and Draughtsmen*. For a long series of years contributions from his pen appeared in the *Architectural Review*, and he has written for the *Quarterly Review* and other publications.



View of Alpinus 1906.

Walden S. E.



Tanday. The Canal

Reginald Hampstead 1916



WYTHURST, CRANLEIGH, SURREY. (Reginald Blomfield, A.R.A., architect.)

MR. BLOMFIELD'S ADDRESS.

MY LORD, LADIES AND GENTLEMEN,—

IT is usual for our Gold Medallists to make an Address on such occasions as this. But before I do so, let me thank you, Lord Plymouth, for the extremely kind things you have said—much too flattering, I am afraid, as they always are on these occasions, but it is nice to hear such kind remarks. I thank you also for the graceful compliment you have paid the Institute by coming here to-night to present the Medal, and you, my colleagues, most sincerely for the honour you have conferred upon me. There are honours that may seem to result from a fortunate combination of circumstances, and though the recipient may feel like a man who has suddenly come into a fortune, he does not value them so much as those which he owes directly to the choice of his colleagues: because it is by their judgment in the long run that he stands or falls. They know his limitations as well as his powers; and if with this knowledge they still feel able to nominate him for such an honour as the Gold Medal conferred by his gracious Majesty the King, he has some ground of hoping that his success is not a mere flash in the pan. I need hardly say that I esteem it a very high honour to be included in the list of our Royal Gold Medallists. There can be no greater encouragement to any architect who still has his eye fixed on the future. But these things lie in the lap of the gods; and it is well to look backwards as well as forwards, and to endeavour to place ourselves in touch with the mighty men of old. I am a firm believer in tradition. In the pride of youth one is tempted to say, with Sthenelus, son of Capaneus,

*Ἡμεῖς τοι πατέρων μέγ' ἀνείμμεν εὐχόμεθ' εἶναι
Τῷ μὴ μοι πατέρας ποθ' ὁμοίῳ ἔνθεο τιμῇ.**

Yet our fathers before us put up a good fight for what they believed was right, and though the methods and occasion of fighting vary with every age, the essential thing is to remember and maintain that gallant spirit, that high standard of honour, that brave endeavour after noble

* Which being interpreted means: "We boast ourselves much better than our fathers, rank them not therefore with me."

aims, which are of more value than any particular success. Therefore this evening I shall take as my text the words of the Preacher: "Let us now praise famous men . . . leaders of the people by their counsels . . . wise and eloquent in their instructions."

It is a far cry back to that little meeting at the Thatched House Tavern in the year 1834 when some half-dozen architects met together to consider the formation of an Institute of Architects. There were present, among others, Barry, Bellamy, Decimus Burton, Fowler, Goldicutt, Gwilt, and Hardwick; and of these we may say with the son of Sirach: "There be of them that have left a name behind them that their praises might be reported, . . . and some there be which have no memorial, but these were merciful men whose righteousness hath not been forgotten." Their buildings have been less fortunate; so we may leave them there, and pass on to Decimus Burton, who, after long years of neglect and oblivion during the days of the Gothic revival, has now come into his own again, and recovered the appreciation that he fully deserved, for he was a very accomplished architect, learned in his art and fastidious in his taste. Few, if any, better things in their way have been done in London in the last hundred years than the screen at Hyde Park Corner, and the hall and staircase of the Athenæum. Burton had caught something of the spirit of the architects of the great Imperial Thermæ. His work is genuine Classic, but it is the Classic of a civilisation not remote as that which inspired the Parthenon, but in a way familiar to us and relatively scarcely less advanced than our own. Burton lived to a great age; he was not a Gold Medallist, or a member of the R.A., and, though his career must have been singularly successful, when he died at St. Leonards a few years back he was almost forgotten by the general public.

Of the others who met at the Thatched House in 1834 Barry became Sir Charles Barry, Gwilt wrote his immense *Encyclopædia*, and Hardwick was the well-known architect of Euston Station and of the Goldsmiths' Hall. The Institute was established the same year as this meeting. Lord de Grey was elected President, Donaldson and Goldicutt Hon. Secretaries, and among the Council were Barry, Decimus Burton, Basevi, and Philip Hardwick. Sir John Soane made the new Institute a handsome donation, and in 1837 a Royal Charter was granted by William IV. All these things are stated in our Kalendar, but I make no apology for introducing them to-night to those of our audience who are not members of this Institute, or even for reminding those who are, of the long and distinguished tradition of the Body to which they belong. It is a good thing now and again to hark back to the hill on which we were born.

I now come to the Royal Gold Medallists of the Institute, and here I have a curious piece of information unearthed for me by our Librarian, Mr. Direks, to whom I am indebted for some very interesting notes which he has been good enough to collect for me out of the Records of the Institute.

In the year 1846 Queen Victoria consented to grant annually a Gold Medal for promoting the purposes of the Institute, and the Council decided that this should be offered annually for "designs calculated to promote the study of Grecian, Roman, and Italian architecture." (You will note in passing that the Council, so far, was faithful to the tradition of classical design; the possibility of Gothic was not even thought of.) Tite, Charles Barry the elder, Angell, Donaldson, and Sydney Smirke drew up the conditions, and the subject set was "a building suitable for the purposes of the Institute, at a cost not to exceed twenty thousand pounds." The result was disappointing. The assessors reported that "not more than one of the designs possessing the slightest pretension to consideration as an architectural composition could be properly executed for less than double the sum specified." Our grandfathers did not beat about the bush, and there is a fine flavour of the polemic of the previous century in this extremely blunt announcement.

No award was made, and the Council thereupon revised their arrangements and decided

to award the Medal on the basis that holds to this day, for distinguished services to architecture without regard to nationality. It would be impossible to deal with all the names of its recipients. They include famous architects and writers on architecture from France, Germany, Austria, Italy, Holland, and America, in addition to most of the best-known architects of this country during the past three generations. I find that it has been awarded in France to such men as Hittorff, Viollet-le-Duc, the Marquis de Vogüé, Garnier, Choisy, and Daumet; in Germany to Schliemann and Dörpfeld; in Italy to Canina and Lanciani; in Austria to Von Ferstel and Hansen; in Holland to Cuypers; and in America to Hunt and McKim; and if you pass in review the names of the Gold Medallists of this country you will get a pretty clear insight into the movement of architecture and the trend of artistic thought from the period when the Medal was established down to the present day. The old Guard was gradually worn down; Cockerell, Barry, Smirke, and Hardwick were succeeded by the champions of the Gothic Revival, and now their day is past and their lesson learnt, and we move again, at least I personally hope so, in the calmer waters of the older tradition, developed and extended by its applications to modern needs. I can select only a few typical names from among the distinguished men who have been awarded the Gold Medal of the Institute.

Early in the list appears the name of Thomas Donaldson, who received the Gold Medal in 1851, and was President in 1863 and 1864. Though not the first to receive the Medal, he did so much for the Institute that we look on him to a great extent as one of its founders. Donaldson was typical of men whom we have always been fortunate in possessing as members of this Society. He was not a great architect, but he was a man of much energy and business capacity, with a high sense of public duty, and he devoted his considerable powers as an organiser and administrator to the formation and development of this Institute. He laid the foundation of a tradition of public utility and high educational purpose which I am glad to say has never been forgotten or abandoned within these walls. He added largely to our splendid architectural library, both in the way of books and drawings, and the badge of office which I have the honour to wear was presented by him to the Institute. Romance appears but rarely in the careers of modern architects, and some, at any rate, of these eminent men had a more adventurous youth than is given to most of us nowadays. Donaldson, who died at the age of ninety in 1885, had gone out to the Cape of Good Hope in 1809 intending to enter a merchant's office; but he joined a force of volunteers that was proceeding to the attack on the Mauritius in the hope of obtaining a commission in the Army. As, however, the French retired without firing a shot, Donaldson's vision of military glory vanished. He returned to England, entered the school of the Royal Academy, travelled widely in Greece and Italy, became an architect and Professor of Architecture at University College, and devoted a long and most useful life to the public and professional aspects of architecture, and to the development of research into all that concerned the history of the art.

Charles Cockerell, who received the first Gold Medal in 1848, was a few years older than Donaldson, and represents, to me at any rate, the other type of architect—the man absolutely immersed in his art, a scholar and an artist with a passionate enthusiasm for all that bore on the history and technique of architecture. That enthusiasm never flagged to the end of a long and fortunate life. I have heard Norman Shaw describe the fascination of the lectures that Cockerell gave at the R.A. when he himself was a student there. Whatever his subject, Cockerell was very soon back among the scenes of his travels and adventures. He forgot his audience in living again those brilliant enterprises of his younger days; and went on pouring out reminiscence after reminiscence till something recalled his attention to the fact that he was not in Greece or Asia Minor, but in the Lecture Room of the Royal Academy. Cockerell—who, besides being a beautiful draughtsman and a sensitive artist, was a fastidious gentleman—had certainly exceptional advan-

tages, but he used them well. He steeped himself in the architecture of Ancient Greece, and carried into his own work something of its delicate and austere reserve. That an artist of such enthusiasm should have his limitations was inevitable. A certain coldness of temperament and a certain academical perfection and propriety may sometimes arouse in more warm-blooded artists an irresistible desire to kick over the traces; but his buildings have always a distinction rare in modern architecture, a certain well-bred personal quality that reveals itself as something beyond the reach of merely conventional accomplishment.

Sir Charles Barry received the Medal in 1850, and on the death of Lord de Grey, who had been President of the Institute from 1835 to 1859, he was offered the Presidency, but declined it, probably for reasons of health, for he died in the following year. Barry was a thoroughly well-trained architect, and it is to be noted in the case of nearly all these famous men that they devoted a good deal more time both to their apprenticeship and to subsequent study abroad than is the fashion at the present day. Five years' apprenticeship, followed by two or three years' study of ancient buildings abroad, was by no means unusual in the training of architects eighty years ago; and though fashions change and the technical detail of that generation may be out of favour with this, there can be no doubt that these men were thoroughly well trained in the technique of architectural design, the more so as they were able to concentrate on it exclusively, instead of having to devote a considerable part of their energies to the acquisition of that applied science which has become a necessary part of the equipment of the modern architect. Barry travelled extensively in France, Greece, Turkey, Syria, Palestine, and Egypt, and this Institute is fortunate in possessing the diaries of J. L. Wolfe, his travelling companion during these three years. Quite recently a very high compliment was paid to Barry in these rooms by a well-known American architect. Mr. Hastings referred to him as one of the most remarkable architects of the nineteenth century, for his powers of planning a big design. Most of his detail is out of fashion and rather dull, but his great ability as an architect is so generally recognised that I need not remind you of his buildings. Two points, however, are noticeable in his work: signs of the rift in the great tradition of English Classic, warnings of the upheaval that was to supersede it. The first is his choice of model, the second his complete surrender of it on a memorable occasion. Whereas Cockerell had definitely elected for Greek models and inspiration, Barry reverted to the more florid traditions of the Italian Renaissance, even following Italian originals pretty closely in his designs for such clubs as the Travellers' and the Reform. Up till comparatively recently Barry's lead was followed in most of our public buildings. Now, the pendulum has swung back to Greek motives seen through French spectacles. My personal impression is that both Cockerell and Barry were a little off the line, and that those who have blindly followed either the one or the other of these distinguished men may perpetuate a fundamental mistake, that of a too direct revivalism and reproduction, which must be sterile in its results however ably it is done. Had either of these men picked up the simple tradition of English Classic at the end of the eighteenth century, and used it frankly to meet the conditions of the day, we should have been spared years of wasted effort; but owing to causes far too intricate to be touched on now, the Lord of Misrule had flung his cap into the arena of architecture, and the first momentous intimation of this was the decision, forced upon Barry, to design the Houses of Parliament in the Gothic manner. There is a suggestive sentence in the Report of the R.I.B.A. Council for 1839. Referring to the Commission appointed to investigate the stones to be used in building the Houses of Parliament, it says: "The investigation may lead perhaps to the adoption of a stone more brilliant in hue than those at present in general use, so as to shed somewhat of the glow of an Attic or a Roman tint upon the architectural features of the public edifices of London": a pious aspiration scarcely realised in the Houses of Parliament designed by Barry with details by A. W. Pugin. There is no need to revive the worn-out controversy as to who did it. Probably it was a

genuine case of co-operation, Barry giving the scheme and general arrangement, and Pugin the detail—detail, by the way, as good as anything of its kind that has ever been done in modern Gothic.

Pugin never had our Gold Medal; in the light of what followed he surely deserved it, for it was the zeal and enthusiasm of this apostle of modern mediævalism that brought out the fighting qualities of the younger generation, and won the day for Neo-Gothic. When one considers that there were solid men such as the Smirkes, the elder Hardwick, and Tite, who practised their weighty Classic with unvarying success, it was a remarkable thing to have done. Later on, Tite, who became Member of Parliament for Bath, made a violent attack on Scott's Gothic design for the new Government buildings and, faithful to his convictions, founded the Tite Prize of the R.I.B.A. for the best design of a given subject, according to the methods of Palladio, Vignola, Wren, and Chambers—a counterblast to the Pugin Studentship, established some ten years earlier, for the promotion of the study of the mediæval architecture of Great Britain and Ireland.

Hardwick, it is true, designed the Lincoln's Inn Library, but I have always understood that the late John Pearson was a young man in his office at the time; and Hardwick's real quality as a designer is best shown in the Propylæa and the impressive Hall of Euston Station, and in the Goldsmiths' Hall.

Sir Robert Smirke takes us back into the eighteenth century, for he was born in 1781. He was made an R.A. in 1811, and received the Gold Medal in 1853. One of the best of his buildings, and one of the best examples of the masculine Classic of his time, the General Post Office, has disappeared within the last year, not without a gallant effort to save it on the part of this Institute. Sydney Smirke, his younger brother, who designed the Reading Room in the British Museum, was awarded the Gold Medal in 1860, and from 1861 to 1868 was Professor of Architecture at the Royal Academy, a post which has now been filled by five of our Gold Medallists. The Smirkes were, I take it, the last representatives of a tradition of Classic derived from Sir Wm. Chambers, filtered through the publications of the Dilettante Society and later of Hittorff and Zanth. Robert Adam's manner, graceful and accomplished as it was, was to some extent an original invention of his own, as indeed he believed it to be himself. Cockerell's manner was not less personal than that of Adam. The final version of Chambers' ideas of civil architecture, somewhat debased and a good deal vulgarised, appeared in the work of Tite and Robert and Sydney Smirke.

In this rapid survey I have now come to the point at which we reach men with whom some of us, at any rate, were personally acquainted. We have passed the disastrous days of the great Exhibition. Digby Wyatt, a man of wide knowledge but no definite bent in design, received the Gold Medal in 1866; but I take it, it must have been a little in the nature of a consolation prize, for the eclecticism and compromise of his generation were things of the past, architecture was deep in the whirlpool of the Gothic Revival, and the cry was raised, that is being raised again to-day, that the architect and his T-square is the *fons et origo malorum*, and that salvation is only to be found in the untrammelled genius of the working man. But the architects were energetic and astute, and they rode the storm with most remarkable skill.

George Gilbert Scott, who received the Gold Medal in 1859, was President of this Institute from 1873–76, and was, I take it, quite one of the ablest men of his time.

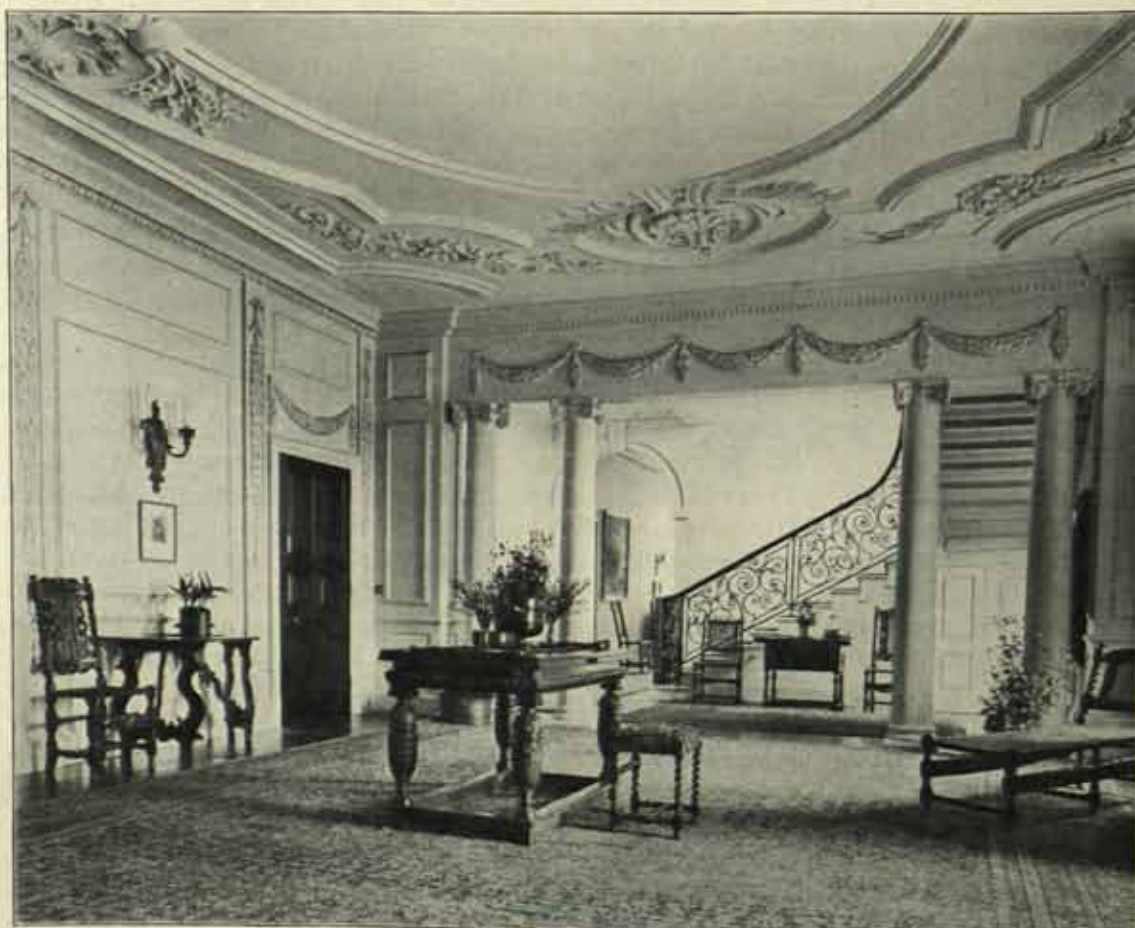
How many hundreds of churches he dealt with has never been known, possibly Scott never knew himself. There is a story that I had from a well-known pupil of his, that Scott once found himself at a remote station in Yorkshire, and was compelled to wire to his head clerk: "Why am I here?" Probably no other architect has ever left his mark on the historical buildings of his country to such an extent as the late Sir Gilbert Scott. In his *Recollections*, written in 1873, he stated: "I had been one of the leading actors in the greatest architectural movement which has occurred since the Classic Renaissance." The value of the movement is open to question, but there

can be no doubt of the fact that Scott was for a time its most redoubtable protagonist ; and the *Dictionary of National Biography* informs us that " his excessive energy in restoration and renovation led to the formation, in the last years of his life, of the Society for the Protection of Ancient Buildings." I fear our generation is not particularly grateful to the zeal and enthusiasm, amateur or professional, of the sixties and seventies. From the point of view of professional practice those days must have been a glorious time for architects. There were not too many architects about, the landed interest was extremely prosperous and ready to support its views on art and religion by putting its hand deep in its pocket. Everywhere there was a fine glow of sentiment and romance, unimpeded by a too exact knowledge of the facts of architecture or practical understanding of its functions. A heavy reckoning has had to be paid for those happy days of romance. It is not only that our historical buildings have suffered. That has happened elsewhere, as in France, to an even more disastrous extent. The real mischief has been the confusion that has arisen between architecture and craftsmanship—a confusion that eighty years ago would have been inconceivable—and the result of this ill-balanced zeal for craftsmanship was that the purpose of architecture was all but forgotten in England, and it is only within the last few years that there has appeared unmistakeable evidence of a return to a saner tradition. It is useless to write history backwards, but one cannot help speculating what men of such great ability as George Gilbert Scott, Street, Pearson, or Bodley might have done for modern architecture if they had been trained in Classic design instead of in the details of Gothic.

Yet as the movement approached its end the conviction of its leaders became almost fanatical. In 1855 Street had written : " I have no reason whatever for doubting that if we wish for a purer school of art we must either entirely forget the works of the Italian Renaissance architects, or remember them only to take warning by their faults and failures." Some twenty years later Street could hardly forgive Bodley for straying beyond the orthodox boundaries of Gothic into the amiable French Renaissance of the London School Board Offices ; and he himself nailed his colours to the mast in the last great effort of his life, the new Law Courts, a really monumental work, however much one may criticise it in detail. Street was not only a very able architect ; Norman Shaw used to say that Street was a man who would have made his mark in any calling that he had put his hand to, and, though without academical training, he wrote most excellent English. He was also a man of strong convictions, and a very dominant individuality. My impression of him remains as I saw him in 1880-81. I was working against time in the schools of the Royal Academy, being indeed anxious to get away for a cricket match in the country ; our old friend, Phene Spiers, brought in a burly bearded man, who tramped across the room and asked me what I was doing. In my haste I answered shortly, but was met by a good-humoured smile, and the visitor retired. I learnt afterwards that this was Mr. Street, and the impression that I formed of him as a strenuous and most capable personality, strong in his views, and indifferent to convention, was I believe the right one. I just recollect, too, that memorable election, in the last year of his life, when the forces of Art and those of Business were set in battle array, and Art won a brilliant victory : a victory cut short, alas ! by Street's untimely death.

Since these days we have learnt from adversity the necessity of combining business aptitude and art. Since these days, too, the battle of the styles has dropped into oblivion. The point of view has shifted, or rather we have come to see that all vital art must be a personal expression—that architecture, not less than the other arts, is the expression of an idea, with this condition added, that it must also be the fulfilment of a particular and specific need. Thus these questions of archæology fall away of themselves. We use in architecture a language based on the past, just as in common parlance we use the language which has resulted from long generations of use ; but we do not use language for the sake of using it, we use it to express a definite idea, we have no more use for the mere stylist than we have for the mere rhetorician. The days of the revivalist are, I hope, finally numbered.

But I have wandered from my point. I set out to praise the mighty men before us, and on that note I should like to conclude my Address. We live so fast nowadays that we have little time to look behind us ; yet it is well to pause now and then to pick up our place in the line of long descent, and to remember the tradition of the past. This Institute has been in existence for nearly eighty years. It is second in point of age only to the Royal Academy and the Royal Society of Painters in Water Colours. I have mentioned to-night a few only of those who in past years have played a great part within the walls of this Institute. Others, scarcely less distinguished, might well be mentioned, and I have said nothing of our contemporaries. Yet I have hoped to suggest to you something of the great tradition of this Institute, and to recall to your memory the part that it has played in the development of modern architecture. I do not doubt that that tradition will be worthily maintained by this and succeeding generations. We ourselves are in the position of trustees for the younger generation, and we are bound to take a far-reaching view of the duties of our trust. Much of the work of the Institute must necessarily be concerned with details of administration, and members have always given their services for the purpose in the most ungrudging spirit. But a wide outlook in the arts is in accordance with our best tradition, nor do I think its members are likely to forget the high purpose for which this Institute exists, for the advancement of architecture, "*usui civium, decori urbium.*"



MOUNDMEERE, BASINGSTOKE. (Reginald Blomfield, A.R.A., architect.)

[Photo. "Country Life."]

VOTE OF THANKS.

THE RT. HON. J. A. PEASE, P.C. (President of the Board of Education) : It is with great pleasure that I rise to move a resolution of thanks to Mr. Reginald Blomfield for his most interesting address. We were all convinced, before we heard the address, that he was the right man for the distinction with which he has been presented this evening, but since we have listened to that most interesting and able address we are convinced more than ever that he will adorn his high position. He has reminded us of the last eighty years, of the traditions of the past and the development of architecture. He has recalled Decimus Burton and his wonderful constructive genius displayed at Hyde Park Corner ; he has gone down the list of many leading architects to the more recent ones of Scott and Street. He has reminded us also of various types and styles of architecture which are pleasant to recall, and which have interested us all. I feel myself somewhat fortunate to be allowed to move this vote of thanks to Mr. Reginald Blomfield. Personally I have for many years felt greatly indebted to him for perhaps one of his most humble works, but at the same time to me most attractive production, his "Formal Gardening in England." Government Departments have often been indebted to him. No Government Department has hesitated to seek his advice, because we have always known that his advice would be readily and also forcibly given. I also think it is not inappropriate that the Board of Education may to-night be associated with this resolution of thanks, because there are so many points of contact between education and architecture. Our whole system of education is built on what I may call constructive lines. If we go to the beginning, we cannot commence our system of education without estimating in advance the cost of the building which we are about to erect. If we think of the materials, just as in architecture so the Board of Education has a great variety of materials from which to select, we have to formulate our plans and designs in connection with education, and we proceed to erect our educational system on a foundation which must be well and truly laid, and we must erect the structure story by story, so that there may be no superstructure which shall crumble. Many other meta-

phors will occur to those who are present. There is the metaphor in connection with erudition—every subject should be well ventilated and have light thrown upon it. There is, of course, the familiar metaphor of the use of the ladder during construction, so that the elementary student can rise up to the University. I am looking forward to a structure containing a broad staircase erected from the basement to the top story to which all may have access and many ascend ; and that at every story there will be doors opening out, so that every one in the State may have fair opportunity of making the best use of the talents with which he has been endowed. Government Departments have considerable work to place connected with architecture, but probably the one over which I have now the privilege to preside is the one more identified with buildings than any other Department. May I recall to your notice the large museums, such as the Science Museum which we are now erecting, the Victoria and Albert Museum, which was built only a comparatively short time ago, the new Royal College of Art, which I hope may be begun next year, and which it is important should be erected in a style which should be a credit to the nation. The local Education Authorities are still more responsible for buildings in the country ; those buildings can, however, only be erected subject to the supervision of the Board of Education and their regulations. We have some little voice in connection with the plans, not only for elementary schools, but secondary schools, training colleges, and technical colleges ; and even have some little influence, perhaps, in connection with the designs for new buildings connected with provincial universities. We are often subjected to a good deal of criticism in connection with our school buildings ; and we have all seen school buildings : one perhaps reminds us of a church, while another reminds us of a chapel, and another reminds us of a warehouse. On one occasion, I think, an architect criticised one of our school buildings as a glass house adapted to a hurricane ! That was an effort at light and ventilation ! But, seriously speaking, we have endeavoured to take advantage of the talent of the country, and I am glad to say that distinguished architects have recently come forward

and given evidence on a Committee which was appointed by my predecessor to advise us as to the character and type of schools in the country. We have come to the conclusion that in the interests of "the Mistress Art," so closely identified with Mr. Reginald Blomfield, we are bound not to adopt any particular type of building, but to allow art to have fair scope for development, and to adapt itself to the various necessities in each district and to the requirements of the place. Unfortunately, although certain municipalities love to compete with one another and to have better buildings than their neighbours, a Local Government Board watches over the interests of the ratepayers; and ratepayers' associations also prevent that little additional expenditure which oftentimes might beautify a building which is perhaps otherwise a little lacking. But at the same time we have been very anxious at the Board of Education that the lines of the buildings which are erected in the country shall be such that beauty is not sacrificed so long as the requirements are fully met in connection with the education which is to be given in the schools. We believe that the experiments which are being made do not adhere too strictly on the one hand to ecclesiastical architecture or even to the municipal block type, but that an educational standard has been attained which still has good opportunity for further development. Finally, may I say to what extent we are indebted, as a Board of Education, to Mr. Reginald Blomfield? He is not only a Visitor of the Royal College of Art, but he is also on an Advisory Committee connected with that Institution. He is also an Adviser on the Consultative Committee of the Victoria and Albert Museum. I constantly go to him for advice, and, as I said before, he gives me his opinions frankly and freely and without any hesitation. He knows his own mind; he is a man in whom we can all place confidence, and to-night he is the right man in the right place. I think we may all congratulate him from the bottom of our hearts on the distinguished position which he has attained, and on the fact that he is this evening the recipient of the Gold Medal.

SIR THOMAS G. JACKSON, R.A., D.C.L., LL.D., Royal Gold Medallist: I have been called upon rather suddenly to second this motion, but I respond with alacrity, for I feel deeply grateful to the Institute for having so kindly invited me to-night and entrusted me with the task which is

now laid upon me. It is a great pleasure to me to be present at this investiture of so old and valued a friend as Mr. Reginald Blomfield, whose work I have known and admired for so long. The honour which has been bestowed upon him is one which all those who are recipients of it value perhaps almost more than any other honour which is open to them. We all work for three classes of persons. First of all, there are our employers. We have to please them: their opinion of our work is valuable to us, because if they did not like it we should have no work to do. Then there are the critics. But I am not sure that anybody in this room has ever got any good from the critics. I do not think that the verdict of artists would be at all in their favour. I do not know whether my fellow-artists have ever got any useful suggestions from a critic. And as for the general public, I am not sure that the critic's work is not more mischievous than good, because it prevents people, in great measure, from thinking for themselves, and very often, I think, prevents a right judgment. Then there is the third class, namely, the class of our brother artists. The verdict from them is the one which we, if we are worth our salt, value more than any other. And it is that which makes the honour which Mr. Reginald Blomfield has received this evening of great value. I know that when you were kind enough to bestow it upon me some years ago, and even went beyond your own ranks to find a recipient, I considered I had received perhaps the greatest honour which could possibly befall any architect. We have been accustomed to look upon Mr. Blomfield as one who regards architecture not merely as a profession, but as an art. It is as an artist that his name will go down to posterity; and no more worthy recipient could be found for the honour which you have conferred than Mr. Reginald Blomfield. May I also point out the additional pleasure it gives me that it should have been bestowed upon an Oxonian, a member of the University which is dear to him, as it is to me? Also that he is a member of that Society to which we both belong, of which he is an Associate, and of which, I trust—indeed, I think I may almost be allowed to prophesy—it cannot be long before he will be admitted to its full honours.

Mr. BLOMFIELD, in responding to the vote of thanks, said: With regard to work on the Advisory Committee of the Education Office referred to by Mr. Pease, I should like to say that I

have been only too delighted to do anything that I can in the way of advice; and I can assure Mr. Pease, on behalf of this Institute, that he will always find here men who are ready and competent to help in any public matter of this sort, and that they will always be willing to place their services at the disposal of the authorities. But I thank you, Sir Thomas, and you, Mr. Pease, for the very kind things you have said, and I should like to thank you and other visitors here for coming, because I consider it a compliment to the Institute. For public men with multifarious engagements to find time to come here on an occasion like this shows that they appreciate the importance of architecture in the life of the community. Sir Thomas Jackson in his speech referred to the little value to be placed upon the teaching of our critics; and there is not the least doubt that the public is often grossly misdirected as to the arts, and the arts suffer in consequence. The first step to the arts coming into their own again, and having justice done to them, is for the various artists in this country who are competent and able to do fine work to be given the opportunity, and that will only come about by the establishment of a sound public opinion. And the first step towards the re-establishment of a sound public opinion is that leaders of public opinion, men in great public places who have responsible duties to discharge, can show that they feel, as you, Sir, and Lord Plymouth and our visitors to-night, and you ladies and gentlemen by coming here have shown, the great importance of the arts, and particularly of the art of architecture.

VOTE OF THANKS TO LORD PLYMOUTH.

MR. ERNEST NEWTON, A.R.A. [F.], said it was his pleasant duty to propose a vote of thanks to Lord Plymouth. These votes of thanks were sometimes of a rather conventional character; but he would assure Lord Plymouth that this was not a mere complimentary vote that he was proposing, but a sincere expression of thanks. Lord Ply-

mouth, who was one of their most distinguished and active Honorary Fellows, was a very busy man, but he always managed to find time to devote to the interests of the Institute. He would not attempt to give an account of all that he had done for architecture, but he might mention that from 1902 to 1905 he was First Commissioner of Works, and had a great deal to do with the Queen Victoria Memorial; and his efforts on behalf of the preservation of the Crystal Palace and its grounds for the people would be fresh in their memory. As Chairman of the Quadrant Commission he had performed a delicate and difficult task with conspicuous ability. What touched them more nearly as architects was that, in whatever capacity he acted, he always showed an understanding and a real sympathy with architecture, which was not usual in high places.

MR. GEORGE HUBBARD, F.S.A. [F.], in seconding the vote of thanks, said that he was only expressing the feeling of gratitude of members of the Institute for his lordship's graciousness in coming that evening to invest their deeply respected and beloved President with the King's Gold Medal. The growing interest of the public in architecture was, to a considerable extent, enhanced by the fact that public men and men of distinction took an active part in the encouragement of the art. Lord Plymouth, he said, was not only a public man, but a man of distinction and influence, and in addition he was a great patron of the art, and the members of the Institute were therefore doubly and trebly grateful to him.

LORD PLYMOUTH, in responding, said he should like to offer his heartfelt thanks to the Council for the honour they had done him in asking him to make this presentation of the Royal Gold Medal. The kindness he had always received in coming to the Institute—now, he was happy to think, with some honorary claim to be present—would make him always ready and anxious to be with them as often as he possibly could.

THE PRESERVATION OF ANCIENT MONUMENTS.

By WILLIAM JAMES DAVIES [A.], R.I.B.A. Essay Medallist 1913.

(Continued from page 552.)

6 (vi.) Preventable causes of destruction range over a wide area, from Americans desiring to purchase and carry away the Tattershall Castle fireplaces, to rabbits burrowing in earth-works.⁵⁷ In the prevention of most of these forms of destruction the question of practicability arises; what sacrifice would or should an individual or community be prepared to make to retain a work of artistic or historic value? The question has lately been raised over the further heightening of the Assouan Dam and the submerging of the Temples of Philæ.⁵⁸ An attempt has been made to plead rather unfairly the cause of the dam by the suggestion of illogical comparisons: is it better to save the Temples of Philæ or starve millions, to save a babe or the Dresden Madonna from a burning garret? Lovers of art need only to be reminded that art is not of the past only, but of the present and the future, that she is the result and enjoyment of leisure and material prosperity, to see that work which contributes to the promotion of improved conditions of life may in the future be furthering the cause of art as much as the destroyed monument might have done. To raise such a stupendous monument to the imperial destiny,

"To seek another's profit
And work another's gain,"

should be sufficient answer to those that carp, always supposing that alternative schemes for saving the temples had been thoroughly considered. Those who protest against the threatened loss of monuments on the score of utility should, instead of aimlessly cavilling, bring forward a scheme by which the object to be attained will be accomplished and the loss averted. On the other hand, if those in charge of designing an improvement squarely faced the restrictions imposed by the retention of the object of interest, they themselves will often be able to produce a scheme which will effect the improvement they have in view, while retaining that which, at first sight, appeared an obstacle. The widening of the Strand before the Kingsway and Aldwych improvement presented such a problem. Dealt with in a bold manner, with the fixed idea that St. Mary-le-Strand and St. Clement Danes were to be preserved, the plan evolved has proved a great success from the point of view for which it was planned. Italy, since the *Risorgimento*, has been faced continually with similar problems, the adaptation of new and modern conditions to an ancient country whose resources had for a long time been neglected. The result has been the unfortunate destruction of the amenities of many famous spots.

6 (vii.) Besides great works of utility and street improvements, another preventable source of destruction is that due to the pulling down of an out-of-date building owing to the value of the site for modern purposes: preventable, it is to be feared, only by legislation. As already mentioned, the Italian Government has power of preservation over any building more than fifty years old.⁵⁹ In England there is no similar legislation, and their salvation must depend on the action of public-spirited men. Important monuments in the charge of public bodies in danger from this cause may sometimes be protected by the weight of public opinion. The National Trust for Places of Historic Interest and Natural Beauty raises funds for the purchase of sites of interest and beauty. Where the site is, say, in the City of London,

⁵⁷ "Archæologist." Letter in *Country Life*, 29th June 1912.

⁵⁸ Sir Henry Knollys and Sir George Birdwood, "The Temples of Philæ and the Assouan Dam." Letters in *The Times*, September and October 1912.

⁵⁹ Reports of H.M. Representatives abroad showing the System adopted in certain Foreign Countries for the Preservation of Ancient Monuments, Miscellaneous No. 7 (1912). (Cd. 6200.)

its value is so great that it is practically impossible to raise sufficient money for such an object in the short time usually available. One means of partially preserving a monument in these circumstances is to rebuild it elsewhere, as Crosby Hall or Temple Bar have been rebuilt. The historic associations of the site are lost, but as examples of artistic development they are preserved to future generations. This mode of preserving interesting relics of the past has become somewhat the vogue lately; the Office of Works recently rebuilt the front of an old house at the corner of Great George Street, Westminster, as the Park front of the Paymaster-General's Office. A similar cause of destruction as that resulting from the value of the site is that arising from the value of the monuments or parts of them to collectors. The Tattershall fireplaces have been mentioned, but there are numberless old houses where the panelling has been torn out and sold, often destroying all interest they possessed; the Globe Room at Banbury is still fresh in one's memory. There is no doubt that the effect of the death duties has been the passing into the market of many a monument from families who have cherished and preserved them, with the result that anything of interest they contained has been dispersed.

6 (viii.) A cause of destruction the reverse of the last comes from individuals with more money to leave than relatives to whom to leave it. A case where the damage is likely to be great is St. Magnus, Kirkwall, where the late Sheriff Thomas left 60,000*l.* for its restoration and repair. It is difficult to spend half the sum in a reasonable manner, and for the remainder it is proposed, among other schemes, to indulge in such an extravagance as fitting the triforium openings with elaborate bronze railings.⁵⁹ Holyrood Chapel escaped from destruction from a similar cause owing to the architect reporting that the building was so decayed that restoration would only be destructive.⁶⁰ The difficulty is only increased when the money is given by a living person, as the classic example of restoration at St. Alban's Abbey shows. As Lord Grimthorpe paid the piper he considered he was entitled to call the tune, though like the Israelitish trumpet blast it destroyed its walls.

6 (ix.) The reparation or restoration of old buildings would be dealt with from different standpoints by people of different vocations, and from whichever point of view the work is carried out those who hold another view will be sure to raise an outcry. The artist will look for the picturesque, unity of colouring, and beauty of form. To him a new piece of stone which it will take a generation to tone down will be an eyesore spoiling the harmonious hues of time; the clearing away of ivy and creeper will destroy the touch Nature has given. The archaeologist, in his enthusiasm, would leave the Roman Forum to all appearances a house-breaker's yard. It is the duty of the architect to hold the balance between his own views and the views of other people; between the desire to preserve the fabric itself and its venerable appearance, its ancient artistic value and its historic associations. The architect has several courses open to him: to follow the old restorers and to restore the building to its original condition; to take the advice of the anti-restorers and to do nothing at all except that which is absolutely necessary for preservation; or to deal with the building in a logical manner. To restore a building to its original condition would be to presume that it is a complete æsthetic entity, like the Parthenon, whereas in England, as has been shown, the buildings are, almost without exception, records of the art of various periods. On the other hand, merely to preserve and protect ignores the fact that a numerous class of monuments still bear their part in the active life of the community, and that these have æsthetic and social interests beyond the mere historical. It may be as well here to describe briefly that which has been termed for convenience the logical

⁵⁹ Report of the Inspector of Ancient Monuments for the year ending 31st March 1911. (Cd. 5690.) (London, 1911.)

⁶⁰ Report from the Joint Select Committee of the House of Lords and the House of Commons on the Ancient Monuments Consolidation and Amendment Bill (H.L.)

Ancient Monuments Protection Bill (H.L.) and Ancient Monuments Protection Bill No. 2 (H.L.) together with the proceedings of the Committee and the Minutes of the Evidence, ordered by the House of Commons to be printed 7th November 1912.

manner. If a monument is not fulfilling the purpose for which it was built nor is likely to be brought into use again it is evident that the only reason for preserving it is as an illustration of artistic and historic development. As such the less done to change it the better; only those things necessitated by maintaining it in no worse state than it has already reached. Buttressing dangerous walls, underpinning foundations, carefully pointing the stone and brickwork, protecting from rain the tops of walls, attending to down-pipes and gutters, glazing the windows to keep out the weather, repairing the doors to keep out the tramps and youths of the neighbourhood, cutting out rotten timber and scarfing in new, relaying such tiles or slates as may be required for weather tightness, are the only kind of operations, amongst others similar, that should be attempted, bearing in mind *both* its artistic and historical characteristics. If, on the other hand, it is a living monument that has to be dealt with rather more may, of necessity, be permitted. In the first place, it is fulfilling the purpose for which it was built, or some kindred purpose to which it has been adapted. "In the first place," because to perform the function for which an object is made is the reason for its being, and because, to maintain it in use is the best way of preserving it for the second object for which it is maintained—i.e. as an example of the work of the past. On the slightest consideration it might be thought that these aims conflict, but it must be remembered that just as the monument is a *living* monument, so are history and art living expressions; they are being made and evolved to-day. They belong no more to the past than the living monument itself. Any alterations or additions, therefore, necessitated by changing conditions, while harmonious with the main fabric, should bear the impress of the age and of the individuality of the artist. If this be done by the true artist there will be no more incongruity than at present existing in the building. To plead that such a principle might lead to "an ebullition of *l'art nouveau*"⁶⁰ in some Gothic masterpiece is to deny the restraint an artist would impose on himself when undertaking the work. It is to hold a poor opinion of the art and architects of to-day to suppose the work cannot be done and well done. To name one not now here, Bodley would have designed a new aisle to a church which, while harmonising with the remainder of the work, would yet have borne the stamp of the age and of his own individuality. The treatment of the main fabric may appear at first sight a more complex problem. If, however, a distinction is made between good repair to a building and the necessary renewal of parts the problem at once simplifies itself. Where a building is in a good state of preservation the cutting out of a piece of badly decayed stone, say, in string or a window, and replacing it with new to fit the adjacent parts will probably be the most that the building need be tampered with on its æsthetic side. If the stone be cut of the full original section, obtainable from some sheltered angle, that piece of stone will be recognised for generations as a piece let in at a later date. Where the building, on the other hand, has parts that have fallen so entirely into decay that absolute renewal of those parts is necessary for the continued use of the building, then those renewals will be of the nature of additions and alterations and should be so treated.

6 (x.) There is one other question that has to be considered in relation to the treatment of old buildings, and that is the bringing into use again of monuments that have fallen into ruin. Here it seems that each case should be decided on its merits. The chief considerations to be reviewed before deciding are, its æsthetic value as it now stands, the amount of æsthetic loss it will undergo in being brought into use again, the cost of undertaking the work, and whether the same amount could not be better employed in providing an entirely new building which would answer the purpose equally well. A Jacobean farmhouse to be made ready as a dwelling place may possibly require a few new floor boards and joists, the roof a few new slates and rafters, the windows reglazing, and the ceilings and the walls in places replastered. It

⁶⁰ G. Baldwin Brown, M.A., *The Care of Ancient Monuments*. (Cambridge, 1905.)

will then last for generations, with practically no loss of artistic or historic value. The case is different with such buildings as the Abbeys of Dunblane and Hexham, the Cathedrals of Dunkeld and Iona; the loss here has been enormous and the practical gain, especially in the last, nil.

6 (xi.) The lifeless copying of old work stands condemned nowadays, but counterfeiting the hand of time is equally bad. The staining of new stonework to match the hue of old has been censured.^{60a} Equally unwholesome in direction are other processes for the purpose of giving the appearance of age, and for that purpose only. The sandblast and greying with lime should be eschewed. The indiscriminate use of the adze is an anachronism, while the special manufacture of material in imitation of the old⁶¹ is sheer forgery. There might be some excuse for these counterfeits if the object to be treated were purely a work of art to be preserved as such, but what monuments are there that would come within this category? Rather select with judgment whatever is to hand suitable for the work, allowing the building to tell its own story and time to harmonise the whole. What would have been the fate of the Auld Brig o' Ayr and Winchester Cathedral⁶² without the grouting machine and diver! Should good, sound, modern work be hidden while shams parade in the light of day?

6 (xii.) Earthworks, from their nature, can receive in themselves little or no treatment for their preservation. They are destroyed or damaged by a variety of causes, all special to themselves: by having rubbish tipped into the fosse; through being turned into golf courses; by cattle trampling over them; by digging for gravel, chalk, and sand, or quarrying for stone; by becoming part of a rabbit warren; by being ploughed up where a meadow and turned into arable land.^{63a} In most cases the damage is done through ignorance, so that where it would be impracticable to rail in the monument notice-boards defining its extent would greatly assist in its protection. Earthworks suggest the question of excavations, which in the past have often caused irretrievable damage to them. When properly undertaken they should be for the purpose of research rather than for collecting a few archaeological objects. It is, therefore, of the utmost importance when they are undertaken that the peculiarities of the site and the exact position where each article is found should be noted with accuracy. The remains found should be catalogued and deposited in a museum. When the principal remains are the walls of a town they are best preserved, after accurate plans have been made, by adopting the same method that has preserved them so well up to the present; by covering them with earth again, as at Caerwent.

6 (xii.) The preservation of the objects found in excavating, and of those which can no longer find a place as part of the monument to which they belong, can best be performed by placing them in museums.⁶³ A museum can never take the place of a monument in educational value. The next best thing is to have the relics associated with a monument housed in it. Room should in all cases be set apart for this object, and, besides containing these, should have models of the monument at different periods, perhaps a small library of works relating to it, and casts and restorations of parts that are gradually disappearing through decay. The latter would form excellent exercises in restoration for those who have a bent that way, and they would do no damage to the monument. Local museums would contain all that is of local interest that cannot be definitely appropriated to the several monuments of the district, and should possess a general catalogue for the whole district to facilitate research. In Bavaria and Prussia local, as opposed to large central museums, are not encouraged, as tending to lack of uniformity, and being prejudicial to serious research. There the matter is looked

^{60a} *Erster Tag für Denkmalpflege*, Report of Monument Congress, (Berlin, 1900.)

⁶¹ "The Restoration of Tattershall Castle," *Builder's Journal*, 27th November 1912.

⁶² T. G. Jackson, R.A., Hon. LL.D. Cambridge, "An

Account of the Building and Repairs now in progress at Winchester Cathedral," *Transactions of the S. Paul's Ecclesiological Society*, vol. vi. (London, 1906-1910.)

⁶³ *The Builder*, p. 83, 19th July 1912.

at from the view of experts, and the general educational result is not considered. Local museums stimulate interest in the district, and will often obtain objects which would otherwise become dispersed; donors who would hesitate to place their treasures in large museums, where they would be lost amongst a multitude of others, being often willing to pose as patrons of learning in their own locality.

6 (xiv.) The work of the State in monument preservation may be divided under two heads, material preservation of the monument and historical preservation. It would be beyond the scope of this Paper to enlarge further on the work of museums, especially with reference to the important official work in connection with the British Museum and South Kensington. With this elimination the practical action of the State is narrowed down to a very small compass. Rather more than a hundred monuments are State-protected, having come under the care of the Office of Works as ancient monuments either under the Ancient Monuments Protection Acts 1882-1910, or by being already in their charge as national buildings. Mere numbers are, however, no indication of the extent of the work; the Tower of London and a single standing stone thus being equally represented. As the clauses of these Acts are permissive only, it depends entirely, except in the case of those buildings which are already the property of the nation, on the desire of private owners of monuments as to what comes under State protection. Greater increase in the number of State-protected monuments is looked for as the issue of further inventories by the Royal Commission on Historic Monuments arouses public interest and the work under the Acts becomes more widely known. Preliminary lists of monuments of importance are being prepared by the Office of Works, with the help of the County Councils and the learned societies. In the last two years twenty-four monuments⁵⁹,⁶⁴ have been placed by private owners under the control of the Commissioners of Works. The class of monument so treated has usually been prehistoric, while the ones already State property, consisting principally of important ecclesiastical buildings in Scotland and a number of castles under the control of the War Department, are historic. Most of the latter are maintained at the expense of the Office of Works, and in those cases only the cost of the work necessitated by their military occupation is recoverable from the War Office. Certain other important buildings of the nature of ancient monuments and maintained by the Office of Works, such as the Banqueting Hall, Whitehall, Somerset House, Strand, and the palaces of Windsor and Hampton Court, are under branches other than the Ancient Monuments Branch. The work of material preservation comprises structural and superficial repairs, and the checking of injury by vegetation, damage by cattle, and vandalism by the public. Before a monument is taken over by the Commissioners of Works the owner is called upon to bear a substantial part of the cost of repair if after careful consideration it appears that the state of disrepair is largely due to the owner's continued neglect.⁶⁴ The work of the Royal Commissions in inventorying the ancient monuments of this isle has already been described. The remainder of the State's work in connection with historical preservation is confined to those monuments coming under its control for material preservation. The work consists of making records of them by means of carefully measured drawings and a series of large photographs taken at the time when the State assumes control, and again after the necessary repairs are finished. This work is to be supplemented in the future by official guides containing reproductions of the drawings. A specially appointed staff deals with both the material and historic preservation of the monuments.

7 (i.) Legislation for the protection of ancient monuments, while not an end in itself, is a very important means of checking their destruction. "The ultimate protectors of national antiquities are the people themselves."⁶⁴ The point of time in the growth of a country when the State interferes on behalf of the protection of its ancient monuments varies considerably.

⁶⁴ Report of the Inspector of Ancient Monuments for year ending 31st March 1912. (Cd. 6510.) (London, 1912.)

When a nation possesses a large number of national monuments of a past epoch the interference will be earlier than in the case where the early monuments are comparatively few and unknown and belong to another national development. It will also be found that where there has been some national convulsion distinctly separating and marking one epoch from another that State interference will soon after take place to preserve those relics which so distinctly belong to the previous period. We have seen how in Italy, a nation possessing innumerable monuments of a past greatness, enactments were made from the times of the Middle Ages. These, though referring more especially to Rome, where the greatest remains were, may be paralleled in other Italian States⁵³ from the seventeenth century onwards. One earlier than the others (1571) provides for the preservation of arms, insignia, and inscriptions on Tuscan palaces. The *Risorgimento* had little effect on ancient monuments beyond that resulting from a new development of a country fallen behind the times, and the re-naming of some world-famous streets and squares. Scandinavia is another country rich in monuments, graves, rune stones, and other remains of a past age. Sweden has had provisions for their preservation since the early part of the seventeenth century, and all carved stones, ancient graves, and treasure have since then been regarded as in a manner State property, or, at least, under the direct protection of the State.⁵⁴ Gustavus Adolphus (1611-1632) created the office of Royal Antiquary (*Riksantikvarius*).⁵⁵ An old law of treasure-trove, dating back to the Middle Ages, was in 1737 adapted to the preservation of antiquities in Denmark.⁵⁶ It may be remarked that Italy and Scandinavia have been referred to before the classic land of Greece, where, with the most glorious remains of architecture and sculpture, one would expect very early attention given to their preservation by their inheritors. The earliest possible consideration was given. Barely had a settled Government been formed after the acknowledgment of Greek independence (1829) by the Turks than a very full enactment was promulgated (1834).⁵⁷ The Roman remains in France and Germany are comparatively few in number. Their earliest national monuments, it may be said, date from Romanesque times, and from then to the French Revolution and Napoleonic wars there had been a continual unfolding and the change of one style into another. Then came the breaking away from tradition and the upheaval of society in France and the quickening of national life in Germany. From 1815 down to the present day the preservation of ancient monuments in Germany is provided for by certain special laws, Cabinet orders, and ministerial regulations. In France the Revolution contemptuously dismissed the past as the age of monarchy, feudalism, and monasticism.⁵⁸ The work of destruction in the early part of the Revolution was continued under the restored monarchy, so that it was not until after another revolution (1830), when men had begun to fear the loss of all touch with mediæval times, that the Government undertook the care of monuments, appointing Louis Vitet General Inspector of Historical Monuments.⁵⁹ His reports and writings had a great influence in France. From 1835-1848 he presided over the Commission of Historic Monuments,⁶⁰ the official bureau charged with care of monuments in France.

7 (ii.) In a country where development has been continuous, where there has been no break in the traditions from generation to generation, so that the chief artistic monuments are still part of the vital life of the community, and where individualism is strongly developed, in such a country, State interference for the preservation of its monuments will be of very slow and gradual growth. Legislation in England has generally followed rather than preceded public opinion, and its functions have been exercised in the meantime by associations influencing that opinion. Various bodies, such as the Society of Antiquaries, the Royal Archæo-

⁵³ Mariotti, *La Legislazione delle Belle Arti*. (Roma, 1892.)

⁵⁴ G. P. Gooch, M.A., *The Cambridge Modern History*, vol. xii., chap. xxvi. (Cambridge, 1910.)

logical Institute of Great Britain and Ireland (founded 1844), the British Archaeological Association (founded the same year), the Irish, Scottish, and Welsh Societies, and numerous local bodies have done good work towards calling public attention to the preservation and upkeep of ancient monuments. It will, therefore, cause no surprise to find in England, where the cathedrals and churches, its principal monuments, have an unbroken tradition from the time of their erection, and where the rights of an individual in his property and the self-reliant enterprise of its people in concerning themselves with the welfare of various objects are so strong, that it was not until 1873 that a Bill was introduced into Parliament. Sir John Lubbock (afterwards Lord Avebury) was its sponsor. It was provoked by the increased interest in archaeology, and by what had been done in the way of legislation on the Continent. It was not until 1882 that it was passed, and then only after a clause compelling an owner of a monument to which the Bill applied to offer the monument to the nation at a fair valuation before destroying it, had been struck out. It is of an extremely mild nature, and refers only to certain scheduled monuments, sixty-eight in all, and principally prehistoric, and to such others as the Sovereign by an Order in Council may add. By the Act⁶⁷ the Commissioners of Works may be constituted owners or guardians of any of the monuments by the owners, or they may purchase them with the consent of the Treasury by agreement with the owners. There are also small penalties (five pounds, or a month) against anyone, except the owner, who shall injure any of the scheduled monuments, the owner being also liable in cases where the Commissioners of Works are the guardians. The Commissioners are bound to maintain any monument of which they are constituted owners or guardians, and such maintenance shall include the fencing, repairing, cleansing, covering in, or anything else for protecting the monument from decay or injury. To see that this is carried out and to report on the best methods of preserving the monuments the Commissioners are to appoint one or more inspectors. The cost of maintenance is subject to the approval of the Treasury. This Act has since been amended, first in 1900,⁶⁸ and again in 1910.⁶⁹ The first amending Act allows the Commissioners power to become *guardians* of a monument not included under the 1882 Act, which, in their opinion, "is a matter of public interest by reason of the historic, traditional, or artistic interest attaching thereto," providing it is not a dwelling place occupied by any person other than the caretaker and his family, and applies the 1882 Act to such monuments; it gives the County Councils power to become guardians or to purchase monuments in their own or adjacent counties; it permits both the Commissioners and the County Councils to receive voluntary contributions for the maintenance of any monument; it allows the Commissioners and a County Council to transfer a monument between themselves; and gives the public a right of access to the monuments under the ownership of the Commissioners or County Councils, and, where they are only guardians, by consent of the owner. The 1910 Act allows the gift or bequest of any monument defined by the 1900 Act to the Commissioners and applies the penalties for injury of the 1882 Act.

7 (iii.) It will be interesting at this point to compare the mild and permissive English legislation with some of the more recent on the Continent. In Italy any building more than fifty years old may be declared a national monument, and by a law passed on 20th June 1909 such monuments occupied by public and religious bodies may not be alienated without the consent of the Government, which may attach conditions. Those responsible for the maintenance of public property of any artistic value must furnish the Government with a list and adequate description of all articles and buildings covered by the terms of the law. The

⁶⁷ Ancient Monuments Protection Act, 1882 (45 & 46 Vict. Cap. 34).
 Vict. Cap. 73).

⁶⁸ Ancient Monuments Protection Act, 1900 (63 & 64 Vict. Cap. 3).
⁶⁹ Ancient Monuments Protection Act, 1910 (10 Ed. VII.,

Ministry of Public Instruction, on the advice of its technical advisers, may undertake repairs for the preservation of national monuments and charge the proprietary bodies with the expense in so far as they are able to meet it, with right of appeal to the Council of State. The Government, provincial and communal authorities, and any society legally constituted for the purpose of preserving to the nation objects of artistic value may acquire, by forced sale, any national monument which the owner, after due warning, has not taken steps to prevent falling into decay. Plans for the restoration of and structural alterations to national monuments must be submitted to the Ministry before they are carried out. Should a private person contract to sell a monument he is bound to give notice of the sale to the Government, which has, within two months (to be extended to four, if the necessary funds are not immediately available) the right of pre-emption at the price agreed by the intending purchaser. A clear space round new buildings in the vicinity of national monuments may be insisted on, compensation being payable in most cases. This law also gives control over the exportation of works of art.^{55a}

7 (iv.) Perhaps the most elaborate machinery has been set up by Austria under the Decree of 31st July 1911. A Central Commission, consisting of a chairman, vice-chairman, a Board of Monuments, in an advisory capacity, and an Office of State Monuments have been constituted. Their duties are to take direct and public action for the investigation and preservation of all memorials of artistic or historical significance. The Board of Monuments is composed of not more than fifty honorary members distinguished for their services in the investigation or preservation of monuments or the preservation of scenery, and are nominated by the Chief Commissioner, at the suggestion of the chairman, for a period of five years, members being eligible for re-appointment. The Office of State Monuments consists of definite civil servants versed in the history of art, technically trained, and possessing legal knowledge, and general conservators. There is also a History of Art Institute in connection with the Central Commission, with a university professor at its head, with requisite technical officials and officials versed in the history of art, and a staff of assistants. The Institute will draw up a general scientific plan of Austria from the point of view of art, arrange publications on monuments, supervise the State museums, and organise and conduct courses of instruction on the preservation of monuments. It is proposed later to establish institutes for prehistoric and numismatic research. There are also local conservators, correspondents, wardens of monuments, and honorary members of the Central Commission. The precise sphere of action of the separate departments and the duties of the officials are to be defined and regulated by the Minister of Public Worship and Education.^{55a}

7 (v.) Though there is no general law in Prussia to compel the preservation of monuments, and more than one Minister with a Teutonic desire for methodical exactness has asserted that it is impossible to frame such a law, the duty in theory falls on the State by a law⁵⁶ which declares that the State is entitled to forbid the destruction of any object which has an appreciable influence in maintaining or furthering the common weal. It must not be thought, however, that there is no legislation on the subject. All churches, whether Evangelical or Roman Catholic, and all public buildings, including those belonging to municipalities and village communities, are to be properly preserved and kept in repair. Corporations requiring State recognition can by this means be compelled to adopt similar measures. Thus numbers of monuments, like cathedrals and churches, town walls, gates and towers, universities, monasteries, and colleges, are under compulsion to be preserved. Building inspectors since 1907 are bound to refuse permission for any building or alterations which would grossly deface the distinctive character of certain streets or squares of a town which have been declared by local enactment of historic or artistic importance, or which would even deface parts of the

⁵⁵ *Landrecht*, Part I., Titel 8, Section 33.

country of great natural beauty.⁷¹ Grants are made to private persons and bodies to assist them in preserving monuments, the State imposing conditions as to their control and supervision in the future. In such a bureaucratic country it is not surprising that little use is found for the private individual, and practically all the work is thrown on Government officials. This course may be suited to the Prussian temperament, and, at all events, ensures uniformity of method and continuance of the work, but the centralisation that results must have a deadening effect on local interest. It might not be inadvisable, therefore, and especially owing to the "numerous regrettable instances which have recently occurred," with which words so many official circulars commence, to employ local antiquaries as wardens, as is done in Austria. The Special Commissioner for Monuments, who is under the Minister for Religious, Educational and Medicinal Affairs, has onerous duties to perform. Not only has he to advise the Minister on all cases which concern him, but he has to give expert opinion to all Government officials, town and other corporations or private individuals who ask for it, besides many duties attached to his office. The chief of the latter is the drawing up of a classified list of all objects from prehistoric times to the year 1870 which are characteristic of their times, and of value for the understanding of art and its historical development, and of history in general, or which serve to recall important historical events.⁷²

7 (vi.) The custom in Prussia of neglecting the services of private individuals is not warranted by the experience of Dr. Hagen, the Director of the General Conservatory of Artistic Monuments and Antiquities in Bavaria. He has found that with an efficient central body it is necessary not only to create a system of honorary local correspondents to secure the enforcement of the law, but also to use their influence and knowledge in cases which the law can scarcely touch. The term "historical monument" covers in Bavaria a wide field, and comprises any structure having artistic, historical, or archaeological interest; not only churches, fortifications, city gates, towers, castles, and town halls, but peasant cottages, small chapels, fountains, old bridges, wayside calvaries, and pillories. The central body includes specialists in prehistoric archaeology, the later history of art, and the practical work of restoration. By the law of 6th July 1908, all national monuments and any monuments discovered since that date are placed under legal protection and a penalty imposed for all damage done to them. The property of the Church was already under the supervision of the State. Excavation, either for antiquities or where antiquities might be expected, is only allowed by permission and under supervision. Where the find is unexpected the work must be stopped, the object left in its original position, and the discovery reported to the authorities in order that the State may have the power to acquire anything of interest that is found. If the authorities take no steps within seven days the work may be resumed. These provisions apply without exception to all prehistoric objects, but in the case of periods later than the Merovingian the protection is confined to such as seem remarkable.⁷³

7 (vii.) Greek legislation, though not of quite so recent a date as the legislation already considered, is extremely interesting, not only on account of its association with the land of classic memories, but for the principle on which it is based and for its drastic penalties. The Greek law, proceeding on the principle that "all antiquities, as the work of the forefathers of the Hellenic people, are a common national possession of all Hellenes,"⁷⁴ gives the Government sole control over all immovable antiquities from classic times to the Middle Ages, including all that may be discovered in the future. Heavy penalties, both of imprisonment and fine, enforce its enactments. Fifteen days' to a year's imprisonment awaits the owner who does not maintain on discovery a monument intact for a month pending the decision of the Ministry of Education as to whether it is worthy or not of preservation, while the failure to preserve un-

⁷¹ Prussian Law of 15th July 1907.

⁷² Greek Monument Act of 1899.

touched an existing ancient monument involves not only fines ranging from 4*l.* to 400*l.*, but also terms of imprisonment, graduated according to the degree of injury caused. Even though no actual damage be done, in addition to these fines, fifteen days' to two years' imprisonment may be inflicted for tampering with or altering ancient buildings or ruins. For definite injury the offender is liable to from two to five years, and in aggravated cases, or where the damage is estimated at over 40*l.*, up to ten years.^{55a}

7 (vii.) Activity of varying degree in the preservation of ancient monuments exists in all European countries. Though in some countries, as noticed with reference to Prussia, no special law exists, there is always to be found, as there is in Belgium and Holland, a branch of one of the Ministries charged with the work of preserving buildings coming within the purview of the Government. In this connection it must be remembered that a Government department on the Continent, and especially in Germany, exercises greater influence than in England. Saxony, another country with no special law for the preservation of monuments though with one against the disfigurement of towns or landscapes by advertisements, new buildings, or alterations to old ones, has a Royal Commission energetically engaged in cataloguing, advising, and supervising. Though the Royal Commission is a comparatively late appointment (1894), cataloguing had already made a fair start; twenty-three catalogues of monuments previous in date to 1800 having appeared during the fourteen years the work had been undertaken. The Evangelical Lutheran Consistory, too, had earlier still (1878) forbidden the alienation of movable objects without their consent, on account of "the interest shared by the whole country in the preservation of noteworthy objects forming part of the inventory of the national churches."^{55a}

7 (ix.) Before discussing the proposed Bill for Great Britain, it will be interesting to see what has lately been accomplished in the way of legislation in one of her great dependencies. Lord Curzon of Kedleston introduced a Bill which was passed into law in 1904 for the protection of ancient monuments in India. The passing of this measure illustrates how much easier it is for less advanced countries to adopt effective means for their protection. Eight years have had to elapse before it is even proposed in the British Parliament to pass a measure of similar stringency, and many more may elapse before it is passed into law. The measure deals with what are termed protected monuments. These are any monuments which, on the initiative of the Local Government, are declared by it to be protected. Objections may be raised to this declaration within a period of one month, and, after consideration, it is either confirmed or withdrawn. A protected monument then comes under the operation of permissive clauses similar in scope to the present English Acts, but their effect is strengthened by the compulsory clauses lying behind them. The Government may offer to enter into an agreement with the owner of a protected monument for its maintenance and custody, the exact terms of which depend on the special merits of each case. When it is apprehended that "a protected monument is in danger of being destroyed, injured, or allowed to decay," and after an offer of an agreement has been refused by the owner, "the Local Government may proceed to acquire it under the provisions of the Land Acquisition Act, 1894, as if the preservation of a protected monument were a 'public purpose' within the meaning of the Act."⁵⁶ The mere declaration that a monument is protected carries with it heavy penalties against anyone except the owner who shall destroy, remove, injure, alter, deface, or imperil it. Other clauses deal in a compulsory manner with the traffic and removal of antiquities, and with excavations, compensation being paid in certain cases. This measure, in dealing only with monuments declared to be protected, is liable to convey the impression, noticed elsewhere in this Paper, that those not so notified may be subjected to any treatment the owner may wish, or may be allowed to decay. The clause however enacting compulsory purchase for a "public purpose" is marked

with the breadth of view that one sees in French monument legislation. It is interesting to note that, in spite of the State's interference, during the time the law has been in operation "even in a country so extraordinarily sensitive as India about anything connected with religious buildings, there has not been one murmur of opposition, no case of injustice, nothing but satisfaction at the operation of the Act."⁷²

7 (x.) While during the present year new laws have been under consideration in Russia and France, three Bills, ^{73a, 74, 75} one a Government measure, have been before the British Parliament. It would be idle to discuss in a Paper of this description measures in foreign countries that do not represent current views, or mere proposals that change from day to day, even though one country, France, is the classic land of monument legislation.⁴⁰ The English proposals will repay examination, as they throw light on what thinking men here consider possible to pass into law at the present stage of public opinion. The Government Bill, the only one with which it is proposed to proceed, together with the suggested amendments made in Joint Committee, consolidates the present Acts of 1882, 1900, and 1910, with an extension by which the owner of a monument who voluntarily places it in the charge of the Commissioners of Works is given the privilege of being exempted from probate and death duties in respect of that monument. This is a perfectly reasonable provision, as the monument has practically passed out of his possession—so much so that, under the Preservation Order to be dealt with presently, it is not considered worth while to include provisions for compulsory purchase, as it is a matter of no interest to the Government to whom the monument belongs if it may not be damaged or destroyed. Besides the consolidation of the old Acts with the extension just mentioned, there are several entirely new provisions, and it is these that are of special interest. The chief innovation is the right of compulsion on behalf of the Government to preserve a monument of national importance. This compulsion is provided in the case where a monument is in danger of destruction or damage by means of a Preservation Order, to be put in force after it has been before both Houses of Parliament for thirty days and neither House has presented an address against it. This Order places the monument under the protection of the Commissioners of Works. If while the Preservation Order is in force—and no time-limit is proposed—the monument is liable to fall into decay the Commissioners may constitute themselves its guardians, and this shall have the same effect as if it were done voluntarily. It will be impossible to put a Preservation Order in force without causing great hardship to an owner of a monument on a valuable site. As long as the monument is protected that site is unavailable for use in other directions. The Commissioners may purchase the monument by agreement, but it is evident they will have no wish to do so as long as the monument is protected. A far wider innovation is the proposed requirement that an owner who wishes to alter structurally or destroy any ancient monument as defined by the Bill⁷⁶ shall first obtain the consent in writing of the Commissioners, whose consent shall not unreasonably be withheld. This part of the Bill, and that relating to Preservation Orders, is not to apply to dwelling-houses, except when occupied only by a caretaker, or to any ecclesiastical buildings except cathedrals. A clause is proposed to give local authorities power to permit the preservation of the architectural amenities of areas under their control, in spite of by-laws to the contrary, and to control advertisements and disfigurements on buildings and ancient monuments detrimental to the amenities of their districts. The machinery for executing the provisions of the new Bill is to be strengthened by the appointment of three Advisory Boards for England, Scotland and

⁷² Lord Curzon of Kedleston, *Parliamentary Debates*, House of Lords, Tuesday, 30th April 1912. Vol. II., No. 24 Official Report, col. 883.

^{73a} A Bill intituled "An Act to consolidate and amend the Law relating to Ancient Monuments." Earl Beauchamp. Ordered to be printed 26th March 1912. (22.)

⁷⁴ A Bill intituled "An Act to extend the Ancient

Monuments Protection Acts 1882 to 1900." Lord Southwark. Ordered to be printed 14th March 1912. (13.)

⁷⁵ A Bill intituled "An Act to amend the Ancient Monuments Protection Acts 1882 to 1900, and further to protect Ancient Monuments." The Lord Eversley. Ordered to be printed 25th April 1912. (38.)

⁷⁶ See para. 5 (i), *ante*.

Wales. Their function is to give advice to the Commissioners of Works, and also to owners of ancient monuments other than dwelling-houses and churches on the owner's invitation. Scott suggested such a Board some seventy years ago as an authority to which questions on restoration might be referred. It is now felt that public opinion will attach more weight to an independent committee of experts than if matters were left to the workings of the departmental mind. These bodies of experts are to be drawn from antiquaries, artists, architects, educationalists, the trustees of the British Museum, and the Royal Commissions on Historic Monuments. Such proposals show an enormous advance on anything that has gone before, and it will be interesting to see what changes are made in the Bill before it becomes law. At present it may be said to have received consideration only from its friends. One point is worthy of notice. To the Office of Works is still left the charge of preserving ancient monuments, though on the Continent it is usually the Ministry of Public Education which has the charge. The latter seems more logical unless it is contemplated to develop the Office of Works into a Ministry of Fine Arts.

8. The subject of the preservation of ancient monuments has now been discussed. The gradual growth of modern ideas on the subject has briefly been shown, and equally briefly those ideas and their application have been described. The future lies in front; before those who are engaged in building the ancient monuments of future generations, and those to whom the care of the present ones is entrusted; before those to whom their welfare is of some moment, and the great majority to whom they are of little account. Let those who are building build for the future as well as the present; let them ponder how their work will be criticised and possibly admired if it withstand for long the ravages of Man and Nature, how their work will influence, in however small a degree, the work of others through all the long avenues of time. Let those who hold the past in trust guard their treasures with zealous care; a relic destroyed, and with it possibly some secret the world may never know, cannot be replaced between now and eternity. Let those who love the past consider lest "that past which is so presumptuously brought forward as a precedent for the present," and which "was itself founded on an alteration of some past that went before it,"⁷⁷ shall affect injuriously the present and future well-being of the community. And let the large majority remember in an age of material advancement that "public utility is not a purely material thing; national traditions, history, art itself, are they not in truth matters of public utility just as much as bridges and arsenals and roads?"⁷⁸ The study of the past should prove an antidote to the present love of novelty and sensation. Does the public lack education or the public galleries ventilation that the cricket and football fields are so full of spectators, and the museums and art galleries so empty? The excuse is only too ready with a shamefaced section who feel they should know better, while with the remainder it is a matter of honest belief that watching professional "sport" is the manlier occupation of the two. With such a dead weight of ignorance it is useless to plead of Art and the Past. Hope lies with the future generation, whose training to appreciate their importance and to take an intelligent interest in them is now beginning to be felt a duty,⁷⁹ a feeling of modern growth but of ancient origin. "Walk about Zion and go round about her; tell the towers thereof. Mark ye well her bulwarks, consider her palaces: that ye may tell it to the generation following." Therefore, let nothing of the past be needlessly or selfishly sacrificed. There are others, too, across the seas who value these remains, and to whom the ancient history and art of England speak of the land of their origin. The relics of the past are the great patrimony, not only of the whole nation, but of the whole English-speaking race beyond. "Les longs souvenirs font les grands peuples."⁸⁰

⁷⁷ Mme. de Staël.

⁷⁸ M. Martin, the Keeper of the Seal in the French Chamber of Deputies, 1841.

⁷⁹ Mr. Charles P. Trevelyan's evidence before the Joint

Committee on the Ancient Monuments Consolidation and Amendment and Protection Bills, 3rd July 1912.

⁸⁰ Montalembert.

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- Senato del Regno—Allegati al Disegno di Legge Conservazione dei Monumenti e degli Oggetti di Antichità e d'Arte. Decreti-Legge dei cessati Governi d'Italia. (Roma 1901)
- Ministero della Pubblica Istruzione—Regolamenti per l'Esecuzione della Legge 12 Giugno 1909, No. 185 Sulla Conservazione dei Monumenti. (Roma 1904)
- PRUSSIA: The Law of 15th July 1907.
- RUSSIA: Draft Law 1912.
- SAXONY: The Law against the disfigurement of Urban and Rural Landscapes 1909.
- SPAIN: Monumentos Declarados Nacionales (Academy of Fine Arts of San Fernando, 1904).
- SWEDEN: His Majesty's Gracious Decree respecting the Preservation of Ancient Monuments. 29th November 1867, 30th May 1873 and 21st April 1886.
- SWITZERLAND: Federal Decree, 30th June 1886.
- TURKEY: Imperial Iradé, 21st February 1884.
- UNITED STATES OF AMERICA: Act of Congress 8th June 1906.
- SIR ROBERT HUNTER: Memorandum as to the Steps taken in various Countries for the Preservation of Historic Monuments and Places of Beauty. Appendix to 1896-7 Report of the National Trust for Places of Historic Interest and Natural Beauty. (London 1897)
- L. TETREAU: Legislation relative aux Monuments et Objets d'Art. (Paris 1896)
- PROF. G. BALDWIN BROWN: The Responsibilities of a Government in the Conservation of National Monuments. (Transactions of 7th Session of the International Congress of Architects, July 1906)
- A. BERNARD: Ditto ditto
- GASTON TRÉLAT: Ditto ditto
- JOSEPH ARTIGAS Y RAMONEDA: Ditto ditto
- PROF. W. R. LETHBRIDGE: Ditto ditto
- NIGEL BOND: How the Governments of Europe and America preserve their Ancient Monuments and Natural Scenery. (Dorset Natural History and Field Club.) (*Builder*, 9th April 1904)

- FILIPPO MARIOTTI: *La Legislazione delle Belle Arti.* (Roma 1892)
 COMMISSION DES MONUMENTS HISTORIQUES: *Constitution et Circulaire &c.* (Paris 1888)
 J. HERR (Translator): *Regolamento per la Conservazione dei Monumenti.* (Roma 1893-4)

ON RESTORATION.

- C. BULS: *La Restauration des Monuments anciens.* (Brussels 1908)
 G. POGGI: *Conservazione dei Monumenti Architectonici.* (1876)
 V. M. C. RUPRICH-ROBERT: *L'Influence de l'opinion publique sur la conservation des Monuments anciens.* (1882)
 C. LUCAS: *Conservation des Monuments.* (1890)
 L. BELTRAMI: *Conservazione dei Monumenti.* (1892)
 S. COLVIN: *Restoration and Anti-Restoration.* (London 1877)
 J. P. SCHMIT: *Atlas complet du manuel de l'architecte des monuments religieux ou traité d'application pratique de l'archéologie chrétienne à la construction, à l'entretien, à la restauration et à la décoration des églises.* (Paris 1820)
 W. H. J. WEALE: *Restauration des Monuments publics en Belgique.* (Brussels 1862)
 SIR E. BECKETT: *A Book on Building, Civil and Ecclesiastical, including Church Restoration.* (London 1880)
 RIGHT HON. G. C. BENTINCK, M.P.: *The Principles upon which Architectural Restoration should be conducted.* (Whitehaven Scientific Association.) (Builder, 22nd Feb. 1879)
 G. CRABER: *Church Restoration.* (1878)
 W. WHITE: *Church Restoration.* (1886)
 ANONYMOUS: *English Cathedrals and their Restoration.* (London 1878)
 — *Restoration of Architectural Monuments as regarded by the Architects of Italy.* (Builder, 10th April 1880)
 — *The Common Sense of Restoration.* (Builder, 20th Sept. 1884)
 — *Restoration or Repair.* (Builder, 30th May 1885)
 — *Ancient Monuments in Modern Italy.* (Builder, 8th March 1902)
 — *Shadow and Substance.* (Builder, 4th Jan. 1879)
 — *Ancient Buildings and "Restoration."* (Builder, 16th Oct. 1886)
 — *The Society for the Protection of Ancient Buildings.* (Builder, 21st July 1888)
 — *Restoration and "Ruination."* (Builder, 22nd Sept. 1888)
 G. R. BURNELL: *Ecclesiastical Monuments of Paris erected during the Middle Ages and principles of their Restoration.* (R.I.B.A. Sessional Papers 1866)
 SOCIETY OF ANTIQUARIES: *Memorandum on Restorations.* (London 1855)
 G. G. SCOTT: *Conservation of Ancient Architectural Monuments.* (R.I.B.A. Sessional Papers 1862)
 — *A Plea for the Faithful Restoration of our Ancient Churches.* (London 1860)
 — *Autobiography.*
 — *Remarks on Secular and Domestic Architecture, Present and Future.* Chap. X. On Restorations. (London 1857)
 — *Lectures.* (London 1879)
 — *Reply to J. J. Stevenson's Paper.* (R.I.B.A. Sessional Papers 1877)
 — *Thorough Anti-Restoration.* (Macmillan's Magazine 1877)
 — *Inaugural Address as President.* (R.I.B.A. Sessional Papers 1873)
 — *Second Opening Address.* (R.I.B.A. Sessional Papers 1874)
 — *Third Opening Address.* (R.I.B.A. Sessional Papers 1875)
 VIOLETT-LE-DUC: *On Restoration.* An English version of the article "Restauration" in his *Dictionnaire Raisonné de l'Architecture Française*, by C. Wethered. (London 1875)
 W. J. LOFTIE: *Thorough Restoration.* (Macmillan's Magazine 1877)
 J. J. STEVENSON: *Architectural Restoration, Principles and Practice.* (R.I.B.A. Sessional Papers 1877)
 — *Historical Documents.* (R.I.B.A. Sessional Papers 1881)
 — *Views of the Anti-restorers.* (Builder, 28th Dec. 1878)
 H. HEATHCOTE STATHAM: *What are the Proper Limits of Conservation in regard to Ancient Buildings?* (Social Science Association.) (Builder, 30th Sept. 1882)
 — *Ancient Buildings and Modern Architects.* (Art Congress, Birmingham.) (Builder, 8th Nov. 1890)
 H. HEATHCOTE STATHAM: *The Treatment of Ancient Buildings.* (National Review Sept. 1897)
 R. HERBERT CARPENTER: *Works of Restoration in France.* (Builder, 19th Nov. 1881)
 WM. WHITE, F.S.A.: *Restoration & Conservation.* (Architectural Association.) (Builder, 2nd and 16th Feb. 1878)
 R. E. POWNALL: *Ditto* ditto
 WM. MORRIS: *The Restoration of Ancient Buildings.* (Notes and Queries Society, Liverpool.) (Builder, 14th and 28th Dec. 1878)
 SAMUEL HUGGINS: *Ditto* ditto
 R. BORDEAUX: *Traité de la réparation des églises.* (1862)
 — *Principes d'Archéologie pratique appliqués à l'entretien, la décoration, et l'ameublement artistique des Églises.* (Caen 1853)
 W. T. A. RADFORD: *What style ought we to employ in additions to old work?* (Exeter 1871)
 L. CLOQUET: *La Restauration des Monuments anciens.* (1902)
 MILNER: *Discussion on the modern style of altering ancient churches as exemplified in the Cathedral of Salisbury.* (1798)
 E. A. FREEMAN: *The Preservation and Restoration of Ancient Monuments.* (Oxford and London 1852)
 — *Principles of Church Restoration.* (London 1846)
 L'ABBÉ AUBER: *Instructions de la commission archéologique diocésaine établie à Poitiers, sur les églises.* (Paris 1851)
 STREET: *Restoration of Ancient Buildings.* (Civil Engineer 1861)
 — *On the Restoration of Ancient Buildings.* (Builder 1861)
 Return to House of Commons of the number of Churches built and restored in England since 1840. (Building News 1876)
 G. AITCHISON: *Principles of Restoration.* (London 1877)
 — *Some Thoughts on Restoration.* (London 1878)
 — *Ancient Buildings: What Principles should govern their Restoration or Preservation as Memorials.* (Builder 1877)
 E. BARRY, R.A.: *The Position of Modern Architects in respect of Architectural Restoration.* (Royal Academy Lecture) (Builder, 9th Feb. 1878)
 — *Modern Architects and Restoration.* (Building News 1878)
 FERGUSSON: *On the Principles of Restoration.* (Fortnightly Review 1868)
 T. H. HALL CAINE: *A New Phase of the Question of Architectural Restoration.* (Builder, 11th Oct. 1879)
 GUILLAUME: *Restoration, What does it mean?* (Building News 1875)
 AYMER VALLANCE: *The Art of William Morris.*
 — *William Morris: His Art, Writings, and Public Life.*
 THE SOCIETY FOR THE PROTECTION OF ANCIENT BUILDINGS:
 — *The Art of leaving things alone.*
 — *Annual Reports and Meetings.* (London 1884 &c.)
 — *Objections to so-called Restoration.*
 — *The Principles of the Society as set forth upon its Foundation.* (1877)
 REV. J. L. PETIT: *Remarks on Church Architecture, Chap. IV. On Modern Repairs and Adaptations.* (London 1841)
 JOHN RUSKIN: *The Seven Lamps of Architecture, Chap. IV. The Lamp of Memory.* (Orpington 1849)
 A. REICHENFELDER: *Restaurierung der Kirchen.* (1889)
 W. DAVIDSON: *The Restorer and his attitude towards old work.* (Edinburgh Architectural Association.) (Builder, March 8, 1912)
 W. T. OLDRIEVE: *What H.M. Office of Works is doing: Historical Buildings in Scotland.* (London 1906)
 J. T. MICKLETHWAITE: *The Church and the old Churches, with a word on Restoration.* St. Paul's Ecclesiological Soc. Vol. II. (London 1886-1890)
 — *A Churchman's Plea on behalf of the Old Churches.* (The Society for the Protection of Ancient Buildings.) (Builder, 12th June 1886)
 W. B. RICHMOND, A.R.A.: *The Impossibility of Restoration.* (The Society for the Protection of Ancient Buildings.) (Builder, 20th June 1891)
 W. W. ROBERTSON: *Our Duty in Respect of Ancient Buildings.* (Edinburgh Architectural Association.) (Builder, 4th March 1893)
 C. H. C.: *A Common-sense View of Architectural Restoration.* (Builder, 9th Aug. 1879)
 UNDERWOOD, PRITCHETT, AND ARMFIELD: *A Question of Restoration. Four letters.* (Builder, May & June 1868)
 A LOOKER ON: *The Theory of Restoration.* (Builder, August 1870)

- SHARPE: Inaugural Address—4th Annual Excursion of the Architectural Association. (*Builder*, August 1873)
- Proposed Restoration of Kirkstall Abbey, Yorkshire, by Sir Gilbert Scott. An Address at the last meeting of the 4th Annual Excursion of the Architectural Association. (*Builder*, Aug. 1873)
- JOHN W. PAPWORTH: On Beauty in Architecture and its Alliance with the Past. (Refers to Memorandum of Society of Antiquaries on Restoration.) (R.I.B.A. Sessional Papers 1857)

ON MATERIAL PRESERVATION.

N.B.—This list consists of a few books on special subjects intimately connected with the material preservation of buildings. Much practical information is contained in many of the works enumerated in the other lists, and may also be found by searching the accounts of restorations of particular buildings such as, to quote an early and late example, L. N. Cottingham: *History, Description and Account of the Restoration of Henry VII's Chapel at Westminster* (1822 to 1829), or T. G. Jackson, R.A., LL.D.: *An Account of the Building and Repairs at Winchester Cathedral*. (Transactions of the S. Paul's Ecclesiastical Soc. vol. vi. London 1906-10.)

(General.)

- SOCIETY FOR THE PROTECTION OF ANCIENT BUILDINGS: Notes on the Repair of Ancient Buildings. (London 1903)
- Recommendations. (London 1884 f.)
- ROYAL INSTITUTE OF BRITISH ARCHITECTS: Hints to Workmen engaged on the Repairs and Restoration of Ancient Buildings. (London 1888)
- DR. F. RATIGEN: The Preservation of Antiquities: translated by G. A. and H. A. Auden. (Cambridge 1905)
- WILFRID BOND, LICENTIATE R.I.B.A.: Church Restoration or Notes on the Repair and Refitting of Churches. (Nottingham Architectural Soc.) (*Builder*, 12th March 1912)
- W. D. CAROE: The Preservation of Ancient Buildings. (The Architectural Association.) (*Builder*, 19th April 1902)
- W. A. FORSYTH, F.R.I.B.A.: The Preservation of Old Buildings. (Manchester Society of Architects.) (*Builder*, 18th Aug. 1911)
- GEO. B. BURNELL: On the Influence of some External Agents on the Durability of Building Materials. (R.I.B.A. Sessional Papers 1853-4)
- ANONYMOUS: The Preservation of Monuments from Atmospheric Influence. (*Builder*, 16th Feb. 1878)
- (Timber.)
- W. H. BIDLAKE: Dry Rot. (1889)
- G. BIRKBECK: Preservation of Timber by Kyan's patent for preventing Dry Rot. (London 1834)
- R. PERRING: Dry Rot: a brief enquiry. (1812)
- J. B. PAPWORTH: The Causes of Dry Rot. (1803)
- R. MCWILLIAM: Essay on Dry Rot. (1818)
- J. LINGARD: Investigation into the Causes of Dry Rot. (1842)
- R. DICKSON: Dry Rot and Kyan's Process. (1838)
- ANONYMOUS: Observations on Dry Rot. (1795)
- Report of Committee appointed to investigate Dry Rot and Kyan's Process. (London 1835)
- The Powell Wood Process. (*Builder*, 5th Dec. 1904)
- The Hydrargyrum-cum-Zinco Process. (*Builder*, 20th April 1895)
- Haakin Wood Vulcanising Co. (*Builder*, 18th April 1895)
- Preservation of Timber. (*Builder*, 27th Feb. 1896)
- Quicklime as Preservative for Wood. (*Builder*, 23rd Nov. 1878)
- Decay in Timber. (Repertory of Arts, &c., No. 68.)
- Decay in Timber. (Brewster's Ency. s.v. Civil Architecture, p. 595.)
- BOULTON: The Antiseptic Treatment of Timber. (Transactions of the Institution of Civil Engineers 1884)
- H. C. STANDAGE: Preservative Processes for Woodwork. (*Builder*, 19th April 1902)
- G. R. TWEEDIE, F.C.S., F.R.M.S.: Preservation of Wood. (Journal of the Royal Microscopical Society, Feb. 1886)
- PROF. A. H. CHURCH, M.A.: Wood; its Chemistry, its Decay and its Preservation. (Carpenters' Hall Lecture.) (*Builder*, 16th April 1887)
- J. RANDALL: Dry Rot: a Philosophical Enquiry. (1807)

- M. FARADAY: Practical Prevention of Dry Rot. (1836)
- PARRY: Decay in Timber. (Nicholson, Journal XX., Nos. 85, 86, 87.)
- HENRY CRACE: On the Restoration and Preservation of Wood Carvings. (R.I.B.A. Sessional Papers 1856)
- (Stone.)
- J. B. DAINES: Preservation of Stone. (R.I.B.A. Sess. Papers 1856)
- C. H. SMITH: Preservation of Stone. (R.I.B.A. Sess. Papers 1861)
- W. TITE: Preservation of Stone. (R.I.B.A. Sess. Papers 1861)
- SIR R. MURCHISON and M. FARADAY: Reports on Preservation of Stone. (1860)
- E. C. ROBIN: The Use of Steam Jets for Cleaning Stone Buildings. (R.I.B.A. Sessional Papers 1854)
- H. HAUNSTEIN: Die Kesseler'schen Fluats. (2nd edn. Berlin 1895)
- EBELMEN: Recueil des Travaux Scientifiques. (Paris 1855)
- BEARD: Minéralogie appliquée aux Arts. (Paris 1821)
- PROF. PALEY, M.A.: Is the Blackness of S. Paul's merely the Effect of Smoke? (*Builder*, 10th Aug. 1878)
- N. C. SZERELMEY: Eudastic and Zopissas Processes as applied by the Ancients for Indurating and Preserving Stone. (London 1861)
- THACKERY TURNER: The Preservation of Stone. (The Times, 15th Nov. 1904)
- PAUL VILLEMEN: The Preservation of French Monuments. (Jousset's Invention.) (*Builder*, 12th May 1911)
- ANONYMOUS: The Preservation of Stone. (*Builder*, 19th Nov. 1904)
- Fluats: a Process for Hardening and Preserving Stone. (Bath 1891)
- Preservation of Stone. (Students' Column.) (*Builder*, 27th March 1886)
- Preservation of Stone. (*Builder*, 11th June 1887)
- (Shoring, &c.)
- VIOLETT-LE-DUC: Dictionnaire Raisonné s.v. Construction, Contre fiche. (Paris 1853-68)
- BURNELL: Operations at Chichester and Bayeux. (R.I.B.A. Sessional Papers 1860-2)
- SCOTT: Tower of S. Mary's Church, Stafford. (R.I.B.A. Sessional Papers 1860-2)
- SEDDON: Grosvenor Church. (R.I.B.A. Sessional Papers 1873)
- C. HADEN STOCK: A Treatise on Shoring and Underpinning. (3rd edn. London 1902)
- G. H. BLAGROVE: Dangerous Structures and how to deal with them. (2nd edn. London 1906)
- (Foundations.)
- W. C. STREET: Foundations. (London 1882)
- W. M. PATON: A Practical Treatise on Foundations. (New York 1902)
- (Damp.)
- L. VAUDROYER: Instruction sur les moyens de prévenir ou de faire cesser l'humidité dans les bâtiments. (Paris 1844)
- Translated by T. L. Donaldson. (R.I.B.A. Sessional Papers 1846)
- C. H. SMITH: On Walls. (R.I.B.A. Sessional Papers 1843)
- J. SYLVESTER: Description of a Process to render Stone impervious to Moisture. (R.I.B.A. Sessional Papers 1843)
- B. FERREY: A letter relative to process described by J. Sylvestre. (R.I.B.A. Sessional Papers 1843)
- KRIM: The Prevention of Damp in Buildings.
- N. C. SZERELMEY: Specification for rendering Structures Waterproof. (London 1857)
- (Various.)
- SOCIETY FOR THE PROTECTION OF ANCIENT BUILDINGS: The Treatment of Wall Surfaces.
- PROF. CHURCH: On the Treatment of Old Paintings. (Soc. for the Protection of Ancient Buildings)
- The Conservation of Historic Buildings and Frescoes. (The Proceedings of the Royal Institution of Great Britain April 1907.)
- KILLINGWORTH HEDGES, M.Inst.C.E.: The Protection of Buildings from Lightning. (Written for the British Association.) (*Builder*, 3rd Sept. 1904)
- ANONYMOUS: Preservation of Steelwork. (*Builder*, 11th Jan. 1902)
- Preserving Wall Paintings at Canterbury. (*Builder*, 26th July 1879)
- W. R. SLACK: Notes on Subsoil Drainage, Foundations, Walls, Openings, and Arches. (Chatham 1878)

REVIEWS.

BYZANTINE AND ROMANESQUE ARCHITECTURE.

Byzantine and Romanesque Architecture. By Sir Thomas Graham Jackson, Bart., R.A. 2 vols. sm. 4to. £2 2s. net. [Cambridge University Press, Fetter Lane, E.C.]

The architectural developments which followed on the decadence of Imperial Roman style and preceded the Gothic are well covered by the titles of Byzantine and Romanesque, which Sir T. G. Jackson couples together in this interesting book. The terms are themselves suggestive of the never-ending controversy which hangs on the birth of mediæval architecture, and which comes vividly before the reader in our author's pages. Was it the old Rome on the Tiber, whose Christian dominion established an architectural *imperium* over the building of the Middle Ages? Or was it the New Rome on the Bosphorus that relighted Eastern art to be a new illumination for the barbarian West? The Greek or the Latin genius—which was it that found a latter-day maturity in the Gothic Cathedral? Where was the germ of Gothic style—in the domed hall of Hagia Sophia with its principle of hollowed unity, or in the aisled basilica of St. Peter's and its drawn-out articulation of serried columns?

Sir T. G. Jackson steers clear of the obsessions of partisan archæology. If he starts mediæval architecture from Rome, he takes us by way of Syria and Salonica to Byzantium, and back to Ravenna and Rome again, and so on to Venice, Pisa, and Milan. In this bird's-eye view of the maze of crossing channels, from which Italian architecture drew its springs, we are not asked to see everything from the East with Strzygowski, nor all from Lombardy with Rivoira. Those who can remember the pleasure with which some thirty years ago they read the author's "Dalmatia" will be prepared for the scholarly treatment and the descriptive insight with which he gives us now a wider review of the Byzantine and Italian monuments. His Dalmatian travels have made for him a standpoint of interest for both East and West; and extending his field by visits to Salonica and Constantinople as well as to the conspicuous examples nearer home, he offers us a first-hand discussion of the Byzantine style and of the Italian monuments that followed it. The weight of his personal observation appears in his own drawings of most of the churches that he describes. The reader has the feeling that he is accompanying the author in a personal inspection of the buildings. There is, perhaps, less of this value of individual scrutiny in the second volume that treats of transalpine Romanesque. We have the same careful description of the varied exhibitions of Romanesque constructive genius, but for authority and argument we are referred very often to Hallam, Fergusson, and Viollet-le-Duc. Now

Hallam's "Europe in the Middle Ages" was written in 1826, and the archæology of Viollet-le-Duc and Fergusson dates to the sixties. There is no quarrel with our author for reminding us that these old authorities are still valuable, and that, discounting their special prejudices, we may get from them information as well as pleasant reading. Still, there are manifest disadvantages in discussing Romanesque architecture regardless of more recent archæology. The sequences of the buildings and of the sculpture that belong to the eleventh and twelfth centuries in France and England are now better understood than they were fifty years ago. For example, the dating of the Durham vaults to the first quarter of the twelfth century is now acknowledged, so that their rib-vaults were in execution by the side of the barrel constructions of Toulouse and Burgundy, and were anterior to the domes of Le Puy and Saint-Front. Again, Provençal sculpture is not taken now as antedating that of other centres of Romanesque art—at any rate at St. Jago de Compostella, at Chartres, and at York statue-work of similar distinction was contemporary. This book neglects these datings—it neither follows nor discusses the investigations of the last twenty years. Yet surely Enlart and Lasteyrie, Kingsley Porter, and Bilson should be taken into account to-day in any review of Romanesque art.

EDWARD S. PRIOR [F.].

BUILDING CONSTRUCTION.

Building Construction. In two vols. Vol. II. [The Architects' Library.] By John H. Markham [A.], Edwin Gunn [A.], Alan G. James, Herbert A. Satchell [F.], F. M. Simpson [F.], J. D. Grace [Hon.A.]. With 142 illustrations. 8o. Lond. 1913. 10s. 6d. net. [Longmans, Green & Co., 39 Paternoster Row.]

This second volume of *Building Construction* well maintains the standard of the preceding volumes. The first third of the book deals with reinforced concrete adequately and clearly as far as space and type of subject permits. Although architecture as it is conceived to-day usually attracts a type of mind averse from mathematical calculations, it is necessary for students to obtain a grasp of the general principles involved in the use of reinforced concrete, and nowhere will they find it in a more condensed and up-to-date form than in the volume under review.

In comparing the reinforced-concrete type of structure with masonry buildings, it is pointed out that "a masonry wall is generally of fairly even thickness, with stresses distributed over its whole length, whereas in reinforced concrete all loads are confined to points of support, and the intermediate walling acts mainly as an enclosing screen." This is not always the case, as it is interesting to note that these remarks as to reinforced concrete can be applied with reasonable accuracy to the type of masonry construction

found in this country after the Choir of Gloucester was built in the 14th century, where the loads were brought down to definite separate points of support, and the wall between was merely a tracery infilling. Bearing this in mind we hardly agree "that reinforced concrete will have very little direct effect on the external lines and general appearance of street architecture"; we should have thought the exact reverse would be probable if the outward appearance is to be the logical expression of the internal structure.

The analysis of shearing stress—vertical and horizontal—might be worked out at greater length, for, unless the student obtains some grounding in the question elsewhere, we think he will find it difficult to get a grip of the subject from the somewhat condensed way in which it is presented in this book.

When reading through the sections explaining the principal systems in vogue, we have been impressed once more by the necessity for the most rigorous and exacting supervision of the work during execution. It is the most probable thing in the world that voids might be left in the concrete, especially in systems of spiral reinforcement such as that of M. Considère.

Sample pieces of reinforced concrete prepared under laboratory conditions are valueless as an indication of the way in which the work will really be carried out.

The description of the Kleine floor is hardly clear as to the way in which the cement joint is formed between the blocks where the tension rod is embedded; a note on the illustration would put this right. By the way, we think the mortar grouting in such floors is often used too dry; a wetter mortar is better for adhesion to the steel, although it is somewhat more difficult for the workman to use.

The next chapter, on Roof Coverings, is excellent; it is written with a workmanlike knowledge of the subject by an architect who appreciates the niceties of the craft usually ignored or overlooked

by the builder. Emphasis is therefore laid upon such points as the necessity for the more extended use of tilting fillets, not only at the eaves, but also at the ridge and against vertical wall surfaces and verges, etc., and the necessity for always preserving the gauge, as to which we should like to add that lead aprons should always be cut or arranged so that the visible length of tile below the lead should in all cases be equal to the gauge.

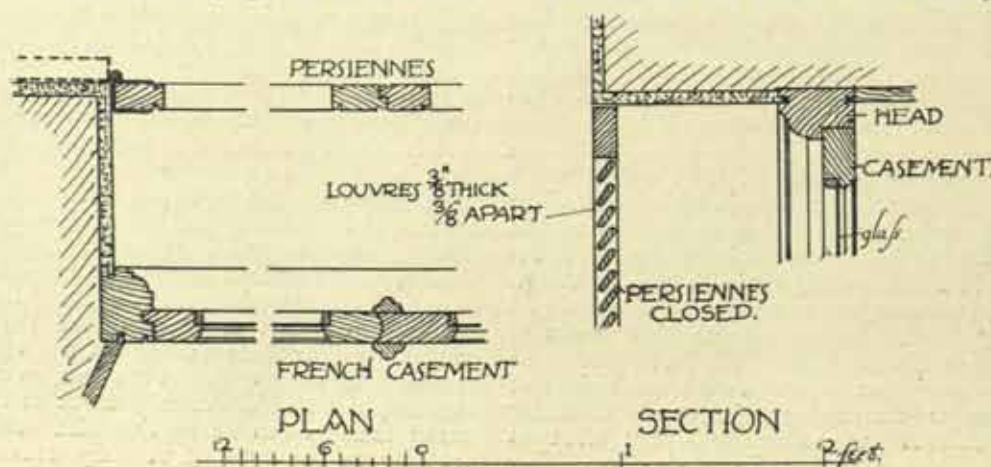
It is pleasing at last to come across explanations and illustrations of swept or laced valleys; we often wondered when this was going to be dealt with in a book on Building Construction.

The author suggests, possibly *faute de mieux*, that angles to vertical tile hanging may be cut and mitred; to our mind this method is taboo and does not agree with the admirable spirit in which the subject has been treated as a whole. There should be a plasticity or softness about the treatment of tile surfaces, but nothing is more rigid and unsympathetic than an angle formed by cutting the tiles.

The next chapter, on External Lead and Zinc Work, is treated more thoroughly than in any other book of which we are aware; any criticism that can be made only has to do with minor matters. For instance, we should be inclined to advocate drips grooved against capillary attraction in all cases, whereas the author permits the omission of the groove. We think the durability of zinc is overestimated. Nothing seems to be said as to the desirability of extra weight of lead in cesspools; but such criticism is merely perfunctory in view of the excellent way the subject has been treated.

There follows one chapter on Glazing and two on Timber which contain much information brought up to date, and which has evidently been condensed as much as possible.

The chapters on Joinery in particular emphasise the point of view of the architect; it is strange that Building Construction has not been treated more definitely from this point of view before. We do not understand the author when he says that



grounds are not necessities to linings and are better omitted, except, perhaps, when the linings are of hard wood which has to be left unpainted; perhaps a recasting of the paragraph would make the author's meaning clearer.

It must not be forgotten that grounds might be treated almost as logically in connection with the plasterer as with the joiner. Adequate fixing may probably be obtained apart from grounds, yet you cannot get perfect joinery if the wrought woodwork is to be used as a stop by the plasterer for his wet material.

In fig. 96 the lower ground to the skirting has been omitted, together with the cross backing, and the framing together of the joinery forming the parts of the skirting might be reconsidered.

Reference is made to the use of the scribe instead of the mitre in machine work for the angles of panel mouldings; in the next edition it would be well to insert a sentence condemning this practice, because of the feather-edge that is inevitable. Nothing at all seems to be said as to the necessity of cross-tonguing all joinery over 9 inches wide.

In the paragraphs dealing with French casements it would have been interesting if a detail of the casement as treated in France had been given as shown in the figure adjoining, for, although just in the act of closing it may appear awkward to an Englishman, it has a good deal to recommend it. Venetian shutters (*persiennes*) are detailed less clumsily abroad than in England, which is an improvement. Owing to the prevalence of their use in modern design, some notice might have been taken of the iron casement as fitted to woodwork.

The book concludes with chapters on Plastering and Painting and Decoration, which, while quite excellent, do not strike us as being so individual and new in treatment as some of the others. Printers' errors are remarkably few. Figure 93 has been printed the wrong way up, and in the second line, p. 242, the word "carved" ought surely to have been "curved."

W. E. VERNON CROMPTON [F.].

Mr. RAMSAY TRAQUAIR [A.] has been appointed to the Chair of Architecture in the McGill University, Montreal, in succession to Professor P. E. Nobbs [A.]. Mr. Traquair, who commenced practice in Edinburgh in 1905, has been in charge of the day classes in architecture at the Edinburgh College of Art.

Books Received.

Indian Architecture: its Psychology, Structure, and History, from the First Mohammedan Invasion to the Present Day. By E. B. Havell. With Illustrations. 80. Lond. 1913. 30s. net. [John Murray, Albemarle Street.]

The Journal of Hellenic Studies, Vol. XXXIII., Part I., among the interesting contents of which is a Paper by Professor W. H. Lethaby on "The Sculptures of the Later Temple of Artemis at Ephesus." [Macmillan & Co., St. Martin's Street, W.C.]



9 CONDUIT STREET, LONDON, W., 28th June 1913.

CHRONICLE.

Extension of Session.

The Council, in the exercise of the powers given by By-law 57, have extended the duration of the Session till the 31st July. The adjourned meeting for the consideration of the Revised Schedule of Charges will take place on Monday the 7th.

The Gold Medal Night.

The Presentation of the Royal Gold Medal last Monday was witnessed by a large assemblage of members and visitors, the presence on the front benches of a numerous company of ladies lending additional grace and brilliancy to the scene. At the dinner at the Café Royal previous to the meeting, the Council had entertained Lord Plymouth, Mr. Joseph Pease, President of the Board of Education, Sir Amherst Selby-Bigge, Permanent Head of the Education Department, Sir Thomas Jackson, R.A., Sir George Frampton, R.A. [*Hon. A.*], Mr. George Clausen, R.A., Mr. Henry Pegram, A.R.A., Mr. F. W. Pomeroy, A.R.A. [*Hon. A.*], Mr. Walter Crane [*Hon. A.*], Sir Malcolm Morris, Mr. Basil Champneys, Mr. A. W. Soames, M.P., Mr. Wm. C. Alexander, Mr. Edward Bond, Mr. L. March Philipps, Professor W. P. Ker, and Mr. Athelstan Riley. These gentlemen came on afterwards to the Institute for the Presentation. Of the six surviving English Gold Medallists three were present, Sir Ernest George [1896], Sir Thomas Jackson [1910], and Mr. Basil Champneys [1912]. As usual on these occasions the walls were hung with plans, photographs, and drawings of the Medallist's principal works, together with a collection of drawings showing his powers with the pencil in pictorial art. Mr. Blomfield had a most enthusiastic reception, and was long and warmly cheered as, decorated with the broad blue ribbon and pendent Medal, he proceeded to deliver his Address.

The Danger to St. Paul's Cathedral: Inspection by Members of the Council R.I.B.A.

In view of the disquieting report drawn up by Sir Francis Fox on the dangers threatening the

stability of St. Paul's Cathedral, Mr. Mervyn Macartney [F.], the Surveyor to the Fabric, invited members of the Council of the Royal Institute to visit the Cathedral and view the evidences of injury caused by the instability of the foundations. Accordingly last week two parties of the Council inspected the Cathedral under the guidance of Mr. Macartney and Sir Francis Fox. *The Times* states that Mr. Macartney informed their representative that the object of the visit was to inspect one of the piers supporting the dome, and also the buttresses of the Cathedral. They examined the south-west pier in the crypt, which measures 45 feet by 20 feet. It was found to have an outer skin of ashlar work, or dressed stone, varying in thickness from 6 in. to 18 in. The interior was filled in with rubble, among which was found all sorts of oddments, probably the remains of the previous Cathedral. Among them was a portion of a Roman column. This agglomerate was subjected to careful investigation. It was found to consist of large pieces of stone and mortar. The proportion of water in mortar is very large, and in process of time the water evaporates; the consequence is that the agglomerate which at one time no doubt filled the interior of the pier has subsided considerably, and the dome, instead of resting on a solid mass 45 feet by 20 feet, now rests only on the skin varying in thickness from 6 in. to 18 in. It is assumed that the other piers are in a similar condition, and that the pressure of the dome therefore falls unequally upon its supports. It is intended to pump concrete into the pier and thus make it again a solid mass. Twenty-two out of the thirty-two buttresses are more or less fissured. Four of them have already been consolidated by pumping liquid cement into the fissures. The clock tower is also under repair. It has been found that the iron dials with which Wren bound the stonework together have so expanded with rust as to break the stone into pieces. The ironwork is being removed and new stone being put in.

Competition for New Parliament Buildings, Canada.

The Canadian Government has decided to erect a large group of new Government Buildings at Ottawa to provide accommodation for the rapidly growing administrative activities of the country. A magnificent site has been selected along the top of the high bluffs overlooking the Ottawa river, to the west of the present group of Parliament buildings. A Competition, limited to architects of the British Empire, will take place for the design, and the selection will be made by a jury of three architects—two Canadian and one British. The Council of the Royal Institute have been asked to appoint the British Assessor, and their choice has fallen upon Mr. T. E. Colclutt, Royal Gold Medallist, Past President. Mr. Colclutt has accepted the position, and is now on his way to Canada to assist in drawing up the conditions of the Competition.

English Oak and other English Timber.

Architects desirous at any time of procuring English oak or any other English timber are invited to write to the Honorary Secretary of the "English Forestry Association," Farnham Common, Slough, Bucks. This Association is not a trading association and does not buy or sell timber. Its objects are to assist consumers and those desirous of procuring English timber to do so with the least possible trouble, and to remove some of the handicaps from which English timber at present suffers. The Honorary Secretary will welcome any inquiries from architects or consumers and give all possible information as to where supplies of English timber can be obtained, or other points relating to the commercial utilisation of timber.

International Competition for Royal Palace and Law Courts at Sofia.

A memorandum from the Ministry of Public Works (Department of Architecture) of Bulgaria, addressed to the Royal Institute, announces that it has been necessary to extend the date for sending in designs in the International Competition for the proposed Royal Palace and Law Courts at Sofia until the 1st November (new style).

Rome Scholarship in Architecture.

The Faculty of Architecture of the British School at Rome met a few days ago to assess the designs submitted by competitors in the first competition for the Rome Scholarship in Architecture, and selected from among them the following to compete in the final competition:—

Thomas Braddock, H. C. Bradshaw, Ernest Cormier, Richard Duckett, Louis de Soissons, William Harding Thompson, and Edward G. Wylie.

Messrs. Duckett, de Soissons, and Thompson are also eligible for the Jarvis Studentship of the Royal Institute of British Architects.

Proposed Exhibitions of Cottages and Buildings for Small Holdings.

The Council of the Garden Cities and Town Planning Association have decided to organise for next year two exhibitions of cottages. One, for urban districts, will include the plans suggested by the Local Government Board in their recent Report, and prizes will be offered for designs for the best elevations and the most economic grouping. In the second exhibition the recommendations of the Departmental Committee on Buildings for Small Holdings will be adopted, and groups of holdings will be formed in which the plans attached to the Committee's Report will be followed. An influential Committee has been formed, which will be presided over by Mr. Christopher Turnor, who was Chairman of the Departmental Committee, and other members of the Committee have agreed to serve.

The Proposed Northern Junction Railway.

Garden Cities and Town Planning for June publishes a plan, prepared by the Garden Cities and Town Planning Association, showing the route of the proposed Northern Junction Railway and the mischief that would be done should the scheme be carried out. Following the route south, it is shown that eighty new homes would be affected, a public common cut in half, Coldwall Wood cut through, another eighty homes affected, Finchley Town Planning Scheme broken up, Hampstead Garden Suburb spoiled, mediæval lake and garden spoiled, Brent Reservoir disfigured by viaduct, public footpaths intercepted, much wooded country destroyed, sixty-four working men's gardens destroyed, Roman Camp and ancient Parish Church injured, grounds of two large athletic clubs ruined, Wembley Park wood and stream destroyed, Twyford Abbey Avenue spoiled, avenue buried, tree-lined public walk destroyed, four recreation grounds cut up, City of London Club fields cut through, traffic avenues intercepted. The Council of the Association has passed the following resolution: "That the Garden Cities and Town Planning Association strongly protests against the route as now proposed for the Northern Junction Railway, on the ground that the railway is being promoted without consideration to other prospective lines of communication, such as the circular road recommended by the Board of Trade, and without reference to the amenities of the districts through which it passes, especially of the Hampstead Garden Suburb."

As we go to press it is announced that the House of Commons Committee have concluded their inquiry, and rejected the Bill, holding the preamble not proved.

St. Peter's Square, Hammersmith.

The following letter has been addressed from the Royal Institute to the Hammersmith Borough Council:—

17th June 1913.

DEAR SIR,—The Town Planning Committee of the R.I.B.A. have watched with interest the controversy that is proceeding with reference to the preservation of St. Peter's Square. They realise that the difficulties with which the Corporation of Hammersmith are faced, in acquiring this garden for the public, are very great, but trust that they will persevere in their efforts, and do everything in their power to secure it as a public open space.

The Committee are impressed with the importance of its preservation for the following reasons:—

It is a particularly interesting example of a late Georgian Square.

Its garden, which was laid out by the well-known landscape gardener, John Loudon, contains a varied collection of trees, many of which are of exceeding beauty.

A public open space is urgently needed in this part of the borough, and it appears to us that its acquisition offers the most favourable opportunity for providing a public garden between the river and King Street that is likely to occur.—Faithfully yours,

H. V. LANCHESTER,
Chairman of Committee.

Town Planning Act: Suggested Amendment.

The Birmingham Town Planning Committee is submitting to the Local Government Board important suggestions for the modification of the present regulations attaching to the Town Planning Act. These suggestions would involve some slight amendment of the Act, but if they could be adopted the time taken in getting Town Planning schemes through would be greatly reduced and much expense would be saved Town Planning Authorities. Birmingham has got through two schemes of Town Planning, and a third is now being considered; the suggestions are the outcome of difficulties which the Committee have experienced.

Hellenic Research: Discoveries in Crete.

At the annual general meeting of the Society for the Promotion of Hellenic Studies, held last Tuesday, Mr. Noel Heaton stated that he had recently left in Crete the President, Sir Arthur Evans, whose return to England had been delayed owing to some important discoveries he had made in the course of his excavations in the Palace of Knossos. Not only had several floors been laid bare, but some interesting frescoes had also been discovered.

The Chairman supplied an illustrated communication on some recent acquisitions in the Department of Greek and Roman Antiquities at the British Museum. Among the most important additions are some rough pieces of the capital of an Ionic column from the early Temple of Artemis at Ephesus. These were found in the supplementary excavations which have been made, and an examination of them corrects certain erroneous conjectures which have been formed of the original outline. The capital is now being reconstructed in the workshops at the British Museum by Mr. Hamilton Smith, who hopes to have it completed in the autumn.

The annual report of the Society states that Mr. R. M. Dawkins, the Director of the British School at Athens, has recently secured for excavation the important site of the Kamares cave in Crete.

Cricket: R.I.B.A. v. A.A.

A match between teams representing the Institute and the Architectural Association will take place on the A.A. Athletic Ground at Elstree on Wednesday, 9th July. A train leaving St. Pancras at 10.8 a.m. will enable spectators to reach the ground by the time play commences.

A Canadian's Gift to the Nation.

Quebec House, Westerham, General Wolfe's early home, has been purchased by Mr. Joseph Bowles Learmont, of Montreal, with the object of founding a national museum and headquarters for all things relating to Wolfe and Canadian history in general. Mr. Learmont is a business man of Montreal, and is well known for his knowledge of literary and historical subjects, on which he frequently lectures. Dr. Doughty, C.M.G., the Canadian archivist, who is shortly coming to England, will, with Mr. Learmont, and assisted by the Westerham Society, organise the new museum. It is intended to refurnish the house as it might have been in the year 1735, when Wolfe and his parents first lived there.

OBITUARY.

John Oldrid Scott, F.S.A., who died on the 30th May in his 72nd year, had been a Fellow of the Institute since 1878. He was the second son of the late Sir Gilbert Scott, R.A., and received his professional training in his father's office, which he entered in 1860, among his fellow-pupils being Sir T. G. Jackson, R.A., Mr. J. J. Stevenson, and Mr. P. R. Johnson. He was associated with his father in many important works, among them the Foreign Office, Whitehall, St. Mary's Cathedral, Edinburgh, Glasgow University, and the restoration work at Salisbury, Hereford, Ripon, Ely, St. David's, and Bangor Cathedrals; and in the case of several of these since his father's death he carried out further work. He designed Lahore Cathedral; Grahamstown Cathedral; St. Paul's, Manchester; St. Mary's, Slough; the Greek Church, Moscow Road, Bayswater; the Training College and Chapel at Ripon, and Bradfield College Chapel. He restored Tewkesbury Abbey, St. Michael's, Coventry (the tower and spire), St. Mary's, Shrewsbury, Beverley Minster, and St. Mary's, Beverley; and Southampton Cathedral. The great church at Norwich, built for the Duke of Norfolk and only lately finished, was for many years in his hands, and the eastern part is to a considerable extent his design, though the church was originally designed as a whole and the nave completed by his elder brother, the late Mr. George Gilbert Scott. *The Times* of the 2nd June, in an interesting notice, says: "Mr. Scott showed a remarkable example—we might say in these days a unique example—of steady persistence in an ideal once accepted and never departed from. His father had been the principal influence in fixing the formula, as one may say, of the Gothic revival. To Sir Gilbert the problem of modern English architecture was based on the simple faith that Gothic, thirteenth or fourteenth century by preference, was the great national style, the best style that ever flourished, and that we could do nothing

better than reproduce it as carefully and learnedly as possible, and restore or renew its ancient examples where defaced by time or violence. His mantle fell on Mr. Oldrid Scott, who seems to have accepted his father's architectural faith implicitly and carried it out religiously. Year after year were seen on the walls of the Royal Academy one or more of his church designs, generally shown in plain businesslike pen-and-ink drawings—modern Gothic churches on the same lines that were accepted fifty years ago, but always good and sound, the product of an accurate knowledge of the style. In this respect he was probably the equal of his father, and no one could have been better qualified for such a task as rebuilding Selby Abbey after the fire, which was a piece of legitimate reconstruction rather than restoration in the ordinary sense. It is to be regretted that he was ousted from the position, which might have fallen to him naturally (as the successor to his father), of architect for the restoration of St. Albans Cathedral, with results to the building which it is now too late to deplore. . . . Mr. Scott lived a very quiet life, not mixing much with his professional brethren, and taking no active part in the various questions often discussed with more or less acerbity at professional gatherings. In fact, he avoided any kind of *réclame*. He was not an architectural genius, for genius will not be confined within the limits of a formula; but he was a sound workman in his own chosen province of architecture, and no one better upheld the dignity of the profession. He married in 1868 Mary Ann, eldest daughter of the late Rev. Thomas Stevens, rector of Bradfield and founder of Bradfield College. His wife and nine children survive him. Mr. Giles Gilbert Scott, the architect of Liverpool Cathedral, is his nephew."

Thomas Edgar Lidiard James, who died on the 12th May, aged 55 years, was elected a Fellow of the Institute in 1893. He was articled to Messrs. Wilson, Willcox & Wilson, of Bath, in 1874, and remained with them afterwards for a time as assistant. In 1879, after spending some months touring abroad, he came to London and worked successively as assistant in the offices of Messrs. Pugin & Pugin, Mr. John Robinson, Mr. R. W. Mylne, and Mr. Frederick Milner. In 1884 he settled in practice in London on his own account at 27 Chancery Lane. Among his early works were a block of shops and chambers, Market Place, for the Corporation of Leicester, won in open competition; residence at Surbiton for Sir John Armine Morris, Bart.; residences and other buildings at Colwyn Bay. As architect to the Rydal Mount School, Colwyn Bay, he made the plans and designs for the new buildings, whereof the dining-hall (with oak panelling, screens, gallery, &c.) and house block of the main quadrangle were erected thirteen years ago at a cost of some £10,000, and the remaining portions, with laboratory, science,

and other class-rooms, were completed since. He was the architect of a large block of residential flats, with shops, on the site of Heath Lodge, Wandsworth Road; the new buildings for Queenswood School, Clapham Park; a block of shop and business premises, South Side, Clapham Common; the tower of the Church of the Ascension, Balham Hill, and the new buildings, Manor House School, Clapham Common; and of the church hall, &c., for St. Margaret's Church, Leytonstone.

THE EXAMINATIONS.

The Final: Alternative Problems in Design.

Instructions.

1. The drawings, which should be on uniform sheets of paper of not less than Imperial size, must be sent to the Secretary of the Board of Architectural Education, Royal Institute of British Architects, 9 Conduit Street, W., on or before the dates specified below.

2. Each set of drawings must be signed by the author, AND HIS NAME AND ADDRESS, and the name of the school, if any, in which the drawings have been prepared, must be attached thereto.

3. All designs, whether done in a school or not, must be accompanied by a declaration from the Student that the design is his own work and that the drawings have been wholly executed by him. In the preparation of the design the Student may profit by advice.

4. Drawings for subjects (a) are to have the shadows projected at any angle of 45° in line, monochrome, or colour. Drawings in subjects (b) are to be finished as working drawings. Lettering on all drawings must be in a clear scholarly character.

Subject X.

(a) A Classical Villa situated in wooded country for a bachelor who has a small but valuable collection of antique sculpture. $\frac{1}{8}$ -inch scale and $\frac{1}{4}$ -inch drawings to show both the villa and the gardens.

(b) A Pier at a First-class Watering Place. Drawings required: $\frac{1}{8}$ -inch scale drawings of the general scheme, with a $\frac{1}{4}$ -inch scale detail showing the construction of the pier and of any pavilion which may be on it.

Subject XI.

(a) A Monumental Tower with a large clock to be built to commemorate the adoption of the meridian of Greenwich throughout the world. Scale of drawings to suit the size of the scheme, but to include one detail drawing.

(b) A Country Club for 300 members in a large provincial town on a corner site, 75 feet wide by 150 feet deep, bounded by two main roads. The building can only extend back half the depth of the site, the remainder of which is to be treated as a formal

garden. Drawings required: $\frac{1}{8}$ -inch scale and $\frac{1}{4}$ -inch.

Subject XII.

(a) A Lighthouse on an isolated rock 100 yards from the entrance to a naval harbour. Scale of drawings to suit the size of the scheme, but to include one detail drawing.

(b) A Golf Club House: To contain:—

Entrance hall, porter's box and telephone. Small room for Secretary and Committee meetings. Clubrooms. Verandah or balcony, facing links. Dressing rooms to contain 350 lockers. Lavatories, baths, shower baths, w.c.'s and urinals. Dining room and servery. Kitchen, scullery, larders, pantry, stores, wine, beer, mineral waters, coals, knives and boots. Heating chamber and drying room. Billiard room (2 tables) (card room optional), bar. Servants' hall. Steward's quarters, sitting room, 2 or 3 bedrooms, &c. Caddies' room, with caddie-master's room adjoining; w.c., and urinals, and workshops.

Drawings required:—2 plans, 2 sections, and 3 elevations to $\frac{1}{8}$ -in. scale, also one $\frac{1}{4}$ -in. detail.

Dates for Submission of Designs in 1913-1914.

	Subject X.	Subject XI.	Subject XII.
United Kingdom	31st Aug.	31st Oct.	31st Dec.
Johannesburg	31st Oct.	31st Dec.	28th Feb.
Melbourne	30th Nov.	31st Jan.	31st Mar.
Sydney	30th Nov.	31st Jan.	31st Mar.
Toronto	30th Sept.	30th Nov.	31st Jan.

MINUTES. XVI.

SPECIAL GENERAL MEETINGS: SCHEDULE OF CHARGES.

At a Special General Meeting, held Monday, 19th May 1913, at 8 p.m.—Present: Mr. Reginald Blomfield, A.R.A., President, in the Chair; 33 Fellows (including 11 members of the Council), 32 Associates (including 1 member of the Council), 2 Licentiates, and 1 Hon. Associate:

The President announced the object of the meeting—viz., to consider the draft of the Revised Schedule of Professional Charges and documents connected therewith which had been prepared by the Council, and copies of which had been issued to members with the notice convening the meeting.

Mr. Ernest Newton, A.R.A., Vice-President, formally moved, and Mr. Alfred W. S. Cross, Vice-President, seconded, the adoption of the documents before the Meeting.

A motion by Mr. Edward Greenop [F.], seconded by Mr. Delias Joseph [F.], that the general principles of the revised Schedule be first discussed, was put to the Meeting and agreed to.

A motion by Mr. Edwin T. Hall [F.], seconded by Mr. H. Hardwicke Langston [A.], supported by Mr. W. H. Atkin-Berry [F.], and spoken against by Messrs. Wm. Woodward [F.], Edward Greenop [F.], James S. Gibson [F.], C. H. Brodie [F.], and C. Stanley Peach [F.], that the document be referred back to the Council for re-consideration of questions of principle, was negatived by a large majority.

It having been agreed, on the motion of Mr. Gibson, seconded by Mr. George Hubbard, F.S.A., Vice-President, that the document be taken clause by clause, the introductory paragraph and clauses 1 to 6 of the Conditions of Engagement were discussed, and various amendments were proposed and agreed to.

On the motion of Mr. Max Clarke [F.], seconded by Mr. Langston, the Meeting was then adjourned, it being announced that the adjourned Meeting would take place on Monday, 2nd June.

The Meeting rose at 10.30 p.m.

At the Special General Meeting adjourned from 19th May, and held Monday, 2nd June 1913, at 8 p.m., for the consideration of the draft revised Schedule of Professional Charges and documents connected therewith—Present: Mr. Reginald Blomfield, A.R.A., in the Chair; 28 Fellows (including 8 members of the Council), 30 Associates (including 1 member of the Council), and 5 Licentiates—the Minutes of the Meeting held 19th May were read and put for confirmation.

Mr. H. Hardwicke Langston [A.] disputing the accuracy of the Minutes on the ground that questions he had put to the Chair and the Chairman's replies did not appear therein, it was pointed out that the Minutes, in accordance with the usual practice, recorded results only, and not details of the Meeting, but that the matters Mr. Langston referred to would be found duly recorded in the verbatim report which had been taken of the proceedings.

The Minutes were then put to the Meeting and passed as correct, Mr. Langston dissenting.

The Meeting passed to the consideration of the draft letter which it was proposed should be sent to clients with the Scale of Professional Charges, and various suggestions for its amendment having been agreed to, a revised draft embodying these suggestions, moved by Mr. C. Stanley Peach, and seconded by Mr. George Hubbard, F.S.A. [F.], was put to the Meeting and carried unanimously.

The Meeting then proceeded to the consideration of Clause 1 of the Scale of Charges, and a motion by Mr. James S. Gibson [F.], seconded by Mr. Delissa Joseph [F.], that a uniform scale of 6 per cent. be charged on the total cost of the complete work was discussed, and on being put to the Meeting was negatived—19 voting for, and 30 against.

The sub-sections of clause 1 were then discussed and various proposals for their amendment were rejected by the Meeting.

On the motion of Mr. J. S. Gibson, seconded by Mr. Edmund Wimperis, it was resolved to adjourn the discussion, and the Meeting separated at 10.40 p.m.

At the Special General Meeting adjourned from 2nd June, and held Monday, 16th June 1913, at 8 p.m., for the consideration of the draft revised Schedule of Professional Charges—Present: Mr. George Hubbard, F.S.A., *Vice-President*, in the Chair; 23 Fellows (including 9 members of the Council), 28 Associates (including 1 member of the Council), and 12 Licentiates—the Minutes of the adjourned Special General Meeting held 2nd June were read and signed as correct.

A resolution by Mr. J. Harold Kennard [A.], seconded by Mr. H. Hardwicke Langston [A.], that the meeting was out of order on the ground that insufficient notice had been given, was put to the meeting and negatived by a large majority.

The Meeting proceeded to the consideration of clause 1, the first paragraph of which was put to the meeting and agreed to as printed.

The second paragraph was also agreed to as printed, two members dissenting.

With regard to the rest of the clause, an amendment by Mr. J. S. Gibson [F.], seconded by Mr. C. Stanley Peach [F.], that a graduated scale for works costing less than £2,500 be approved, and that it be referred to the Council to formulate this scale, which should not in any case exceed 8 per cent. nor fall below 5 per cent., was carried by 33 votes against 8.

The foregoing amendment being put as the substantive

motion, an amendment by Mr. Hubert C. Corlette [F.], seconded by Mr. F. T. W. Goldsmith [F.], that the sliding scale should embody the principle that the rate of charge shall not be more than 10 per cent. and not less than 5 per cent., was negatived.

An amendment by Mr. W. Henry White [F.] to omit items 3, 4, and 5 from the clause was negatived.

An amendment by Mr. Delissa Joseph [F.], seconded by Mr. Langston, was carried (29 voting for and 8 against), and became the substantive motion, that the scale should read "Cost of works not exceeding £500, 10 per cent.; not exceeding £1,000, 8 per cent.; not exceeding £1,500, 7 per cent.; not exceeding £2,000, 6 per cent."

An amendment by Mr. W. Rowland Howell [F.] proposing a flat rate of 6 per cent. for works costing £2,500 was negatived.

An amendment by Mr. Edward Greenop [F.], seconded by Mr. Herbert Shepherd [A.], that the scale should read in the form originally drafted by the Council, was negatived.

Finally, a proposal by Mr. Delissa Joseph, seconded by Mr. Maurice B. Adams [F.], "That the Council's Schedule in clause 1 be adopted in principle, subject to the totals being stated at a flat rate in each case at the nearest round figures, in the same manner as in Ryde's Scale," was put to the vote and carried, first as an amendment, and then as the substantive motion, against 3 dissentients.

The Meeting was then adjourned on the motion of Mr. F. W. Marks [F.], seconded by Mr. Gibson, and the proceedings terminated at 10.45 p.m.

ORDINARY GENERAL MEETING: ROYAL GOLD MEDAL

At the Sixteenth General Meeting (Ordinary) of the Session 1912-13, held Monday, 23rd June 1913, at 8.30 p.m.—Present: Mr. Reginald Blomfield, A.R.A., in the Chair; 48 Fellows (including 22 members of the Council), 36 Associates (including 2 members of the Council), 10 Licentiates, 8 Hon. Associates, and a large company of visitors—the Minutes of the Meeting held 9th June having been published in the JOURNAL were taken as read and signed as correct.

Mr. E. Guy Dawber, *Vice-President*, acting for the Hon. Secretary, announced the decease of John Oldrid Scott, *Fellow*, and it was resolved that the regrets of the Institute for the loss it had sustained by his death be entered on the Minutes and that a message of sympathy and condolence be sent on behalf of the Institute to his widow and family.

The Secretary announced that the Council had nominated to the Honorary Fellowship of the Institute the Right Hon. Reginald Balliol Brett, Viscount Esher, G.C.V.O.

The following gentlemen attending for the first time since their election were formally admitted by the President, viz.: William Louis Lucas, B.A. Cantab., *Fellow*; James Campbell Reid, *Fellow*; Claude P. Jones, *Licentiate*.

The President then vacated the Chair, which was taken by Sir Ernest George, A.R.A., *Past President*.

The Right Hon. the Earl of Plymouth, P.C., *Hon. Fellow*, delivered an address on the Presentation of the Royal Gold Medal to Mr. Reginald Blomfield, and formally invested him with the Medal.

Mr. Blomfield responded, and delivered an address on notable architects of the Victorian era.

On the motion of the Right Hon. Joseph Pease, P.C., President of the Board of Education, seconded by Sir Thomas G. Jackson, B.A., a vote of thanks was passed by acclamation to Mr. Blomfield for his address, and was briefly responded to.

On the motion of Mr. Ernest Newton, A.R.A., *Vice-President*, seconded by Mr. George Hubbard, F.S.A., *Vice-President*, a vote of thanks was accorded by acclamation to Lord Plymouth for attending and making the Presentation.

His lordship having briefly responded, the proceedings came to an end, and the Meeting separated at 10 p.m.



SCHLOSS LEOPOLDSKRON, SALZBURG.

BAROQUE ARCHITECTURE.

Essay submitted under the motto "*Chi non sa far stupir vada alla striglia*," and awarded a Certificate of Honourable Mention in the Competition for the Royal Institute Essay Medal 1913.

By MARTIN SHAW BRIGGS [A.].

I.

RESEARCH in an obscure or discredited byway of art may yield to a student the same unique satisfaction which an explorer feels on gazing over some desolate plateau with the knowledge that no human eyes have ever seen what he sees. And although in likening Baroque architecture to a *terra incognita* there is a semblance of exaggeration, yet to English readers the first few beams of criticism that have been directed towards its dark mysteries have done little to dispel the gloom.

Fashion in the mistress art is not perhaps so fickle a jade as in other aspects of life, yet her changeable moods are felt even in the enduring medium of stone and steel. Modern improvements in printing and illustration have enabled the architect of to-day to draw his inspiration from every bygone age, and have caused the recurring sequence of historical revivals now so familiar to us all. How is it, then, that there has never been a Baroque revival, and that so little interest has hitherto been evinced in the history of the style?

Chiefly because the period has for centuries been under the ban, attacked by the brilliant pen of Ruskin and the clumsy scrawls of less reputable critics, but partly because the neglect which has enveloped it precluded any real understanding of its proper scope and latent possibilities.

"What's in a name?" once asked a sage, and never has a wise saying been more fruitful of contradiction, for a name may as easily mislead the unwary in architecture as in other realms, and a nickname is hard indeed to outlive. The Quakers and the Tories have had no more to suffer than those virile and original masters of the seventeenth century, whose genius created the misunderstood style known as Baroque.

There are many glaring defects in architectural terminology, and often the origin of well-

worn definitions is difficult to trace. In the present instance even the painful erudition of the Teuton brain has failed to elucidate a satisfactory explanation. A plausible, if only hypothetical, theory advanced by the present writer may satisfy those who have the imaginative faculty rather than the strictly sceptical mind.

In the days when that delightful rogue and liar Benvenuto Cellini was varying his amorous escapades with his marvellous achievements in art there came from the Mediterranean fisheries to his work-bench pearls of all shapes and sizes—some misshapen and useless. These abortive pearls were known to the Portuguese fisher-folk by the name of *barocca*, but the term may have reached Portugal from Phœnicia, or from some Moorish source. At all events, it provided a convenient description for its purpose, and as workmen in the sixteenth century were guilty of slang, just as their successors are to-day, there is no harm in assuming that the nickname soon outgrew its first object and gradually came to be applied to any detail of artistic design which varied from conventional lines.

The hard line which differentiates the architect of modern times from the goldsmith and the painter did not exist when one man possessed the qualifications of half-a-dozen, and Cellini the goldsmith-sculptor, or Michelangelo the sculptor-painter-architect-poet are but the counterpart of our English Jacks-of-all-trades—Inigo Jones, Wren, and Vanbrugh. So may the goldsmith's nickname have penetrated to the architect's *atelier* in Rome.

A more academic theory relegates the word to a purely literary origin and connects it with *barocco*, implying a figure of syllogism which draws conclusions from the absurd. In this regard it must not be forgotten that there was a close parallel between the Baroque movements in architecture and literature during the seventeenth century, the period which produced the Euphuists and the *Précieux* outside Italy.

Beginning then with an unfortunate title to mar its reputation, this style of design has gradually ceased to be credited with many of its greatest exploits, for among the uneducated in such matters the sole test has come to be limited to the extravagance of its ornamental features. This is generalising to excess, and a critic cannot be too careful of his definitions, especially with a hostile public.

The Baroque period in Italy may be broadly defined as the seventeenth century, although many of its earlier examples date back to 1580, or thereabouts, while others, notably the Fountain of Trevi (1735), are much later. Inspired by Michelangelo and his pupils, and fostered by the Counter-Reformation, it found its most striking expression in Rome, spreading thence all over Italy, with a notable culmination in Turin, then the capital of those Piedmontese kings who were destined to create United Italy.

In other countries the movement found an already free style in architectural design, so that its predominant plea for a revolt against pedantry had less scope. Its chief examples out of Italy are thus due to the enterprise of the religious orders, the Jesuits and the Theatines, and are permeated with the spirit of Papal Rome. Throughout Europe it remained essentially Italian wherever its influence extended.

The line separating Baroque art from Rococo is faintly marked and seldom understood. The ink is barely dry on the plates of a new German publication which includes both indiscriminately under the title of *Deutscher Barock*. That there is a distinction is now becoming recognised. Baroque being in its essence Italian and masculine, Rococo French and effeminate. The word *Rocaille* (= rockwork) well describes the character of the fantastic decoration of the later style, always light and never architectural. With this phase a student of Baroque architecture need not be seriously concerned. His hands are sufficiently occupied in disentangling himself from the maze of uncertainty and misunderstanding which at present seems to prevent any reasonably constructive criticism of the period.

II.

No one conversant with the condition of Italy during the later years of the sixteenth century can fail to appreciate the peculiarly favourable circumstances prevailing for the great change which took place in architectural design.

With the exception of Palladio and Michelangelo few architects remained who had not lost the true spirit of the Renaissance altogether. That wonderful reformation of thought and of artistic expression based all its inspiration on the definite cult of beauty for beauty's own sake, whether of form or of thought. It was the antithesis of the mystical spirit of mediævalism, in this respect, that devotion to an unseen ideal counted so little and worship of the visible counted so much. There was a warm and pulsating humanity in its literature and its painting which monastic genius always lacked, in spite of other great mediæval qualities, and appreciation of classic culture was not the mere craze for copyism which has frequently appeared as a revival in modern art history. Pedantry did not make its appearance in Italy until men began to systematise classic architecture to a matter of tables and dimensions. And as the subtle change began to make itself felt the genius of Palladio and Michelangelo rose superior to its insidious influence, so much so that in the opinion of many the Renaissance in architecture rose to its culmination in their buildings, where all that their predecessors had learned was assimilated in their great brains and surpassed by their originality and vigour.

These two men are of notable importance here, because, at a time when the tendency was to adopt conventional forms unquestioningly, they dared to invent new methods and details for themselves. Palladio had received a training in architecture, and so naturally developed on accepted lines, but Michelangelo came to architecture an old man with a whole career of painting and sculpture behind him. His work is therefore bolder in conception than Palladio's, just because he had fewer conventional prejudices to forget, and though he neither equalled nor touched the level of "the builder of Vicenza" he probably was the chief originator of the Baroque style.

It was not so much that Michelangelo introduced Baroque elements into his designs, though there are isolated cases of this, as that he set the fashion of independent thought in architecture. From his death onwards there is a long succession of pupils and followers, each striving after individual expression according to his own lights, and producing work correspondingly great or grotesque. This conscious striving is the keynote to the whole Baroque movement.

Great as was Michelangelo's influence in his day, there would never have been a revolution such as actually occurred had not other conditions favoured, or, in fact, necessitated it. Chief among these must be mentioned the Counter-Reformation, of which Baroque architecture came to be the visible symbol, outside as well as within the confines of Italy.

The Renaissance spirit was distinctly inimical to the welfare of the Church. Speculation and philosophy in all its forms suddenly displaced the accepted theories of life and religion, the writings of Greek sages taking precedence of the Apostolic Fathers. Miracles and relics lost their charm; penances and absolutions diminished in value. Against an ever-increasing tide, which threatened to overwhelm the Church spiritual and temporal, the pontiffs at the Vatican began to organise a new reforming scheme within their ranks. A succession of brilliant and energetic Popes at last succeeded in stemming the tide, and for this victory they were chiefly indebted to the great religious orders formed in the sixteenth century.

The Jesuits were the most outstanding of these orders, and they accomplished their difficult end by an extraordinary and devoted efficiency. From the force of the opposition arrayed against them they realised the claims of intellect, and in a very few years they produced a vast body of trained theologians, cultured and courteous scholars well versed in the use of the

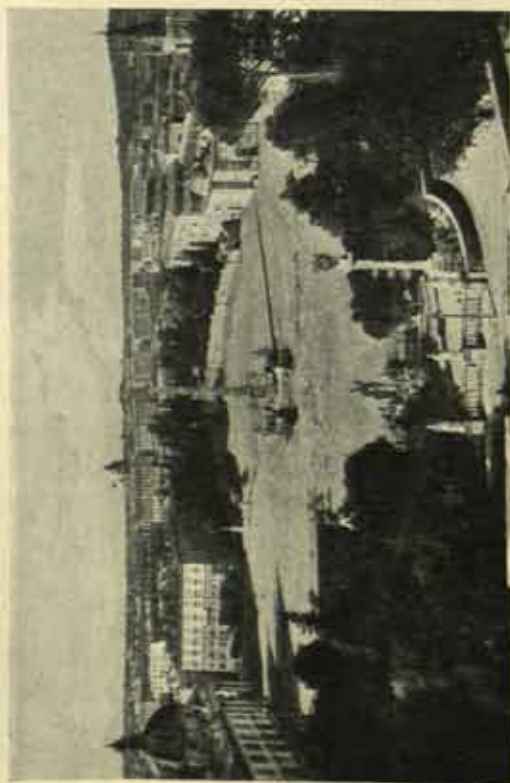


Fig. 1.—Piazza del Popolo, Rome.

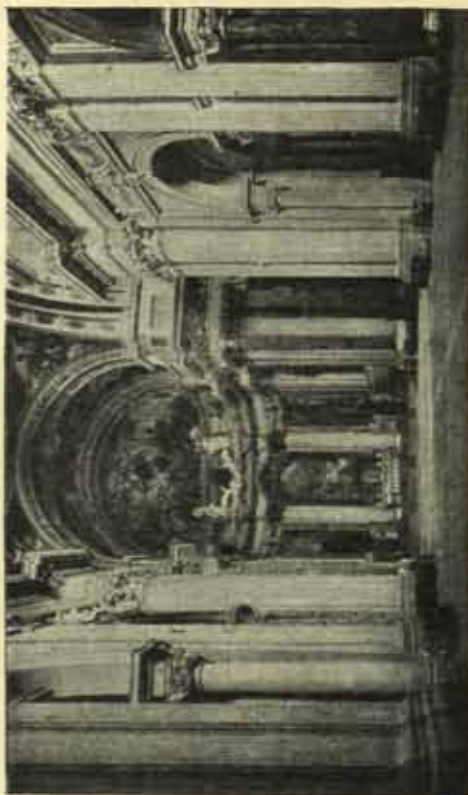


Fig. 3.—S. Ignazio, Rome.

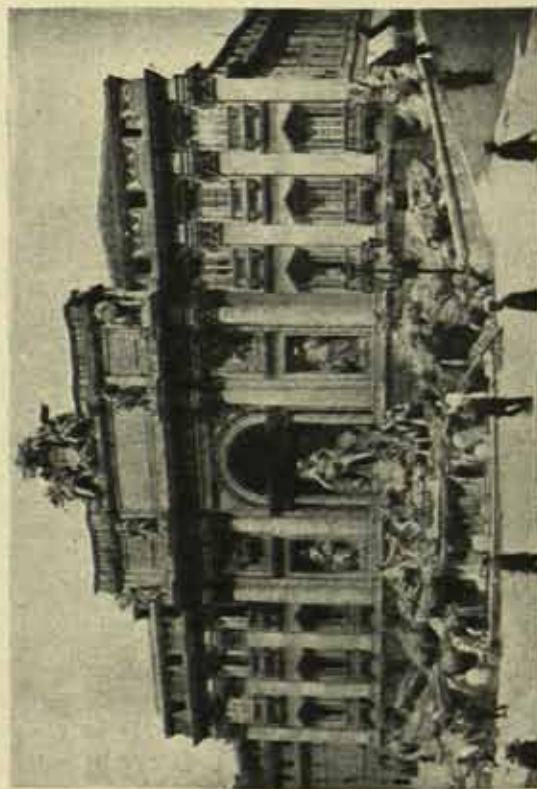


Fig. 2.—Fontana di Trevi, Rome.

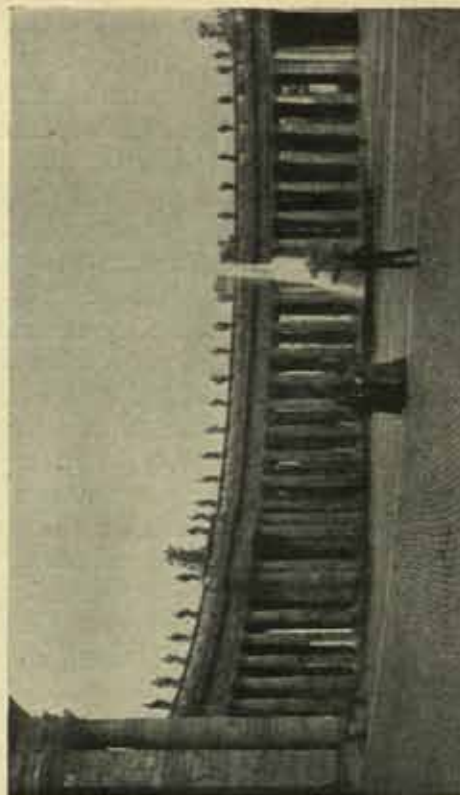


Fig. 4.—St. Peter's, Rome, Colonnade.

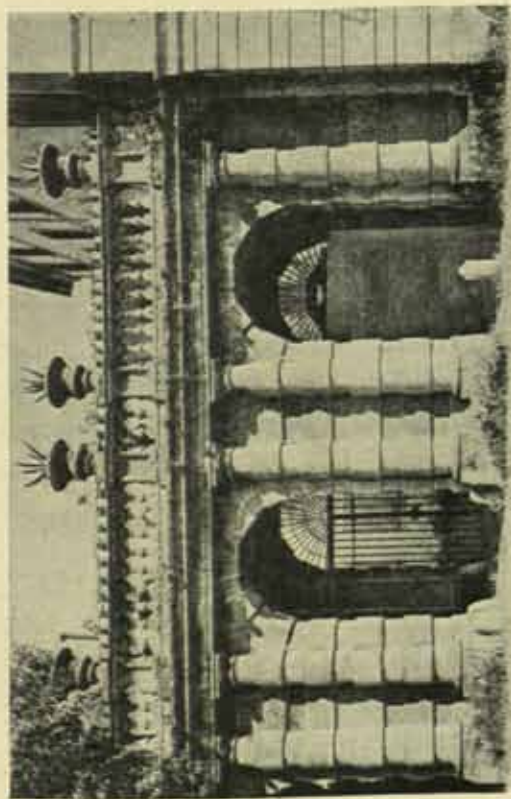


Fig. 5. — VILLA BORGHESSE, FIASCATI: GATEWAY.

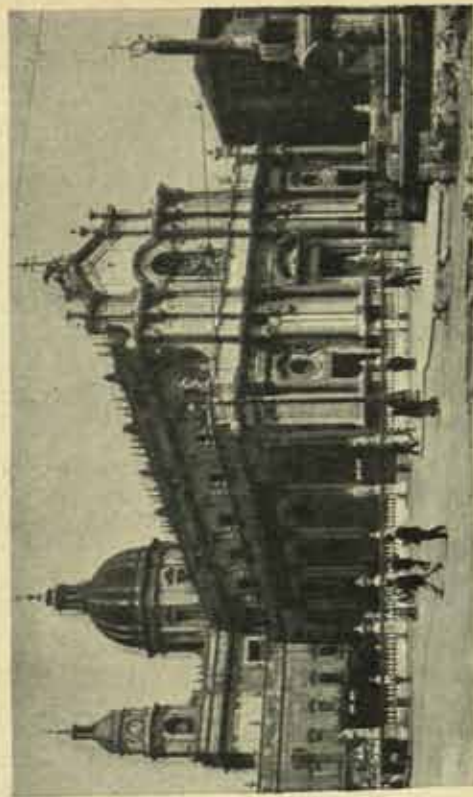


Fig. 7. — THE CATHEDRAL, CATANIA.

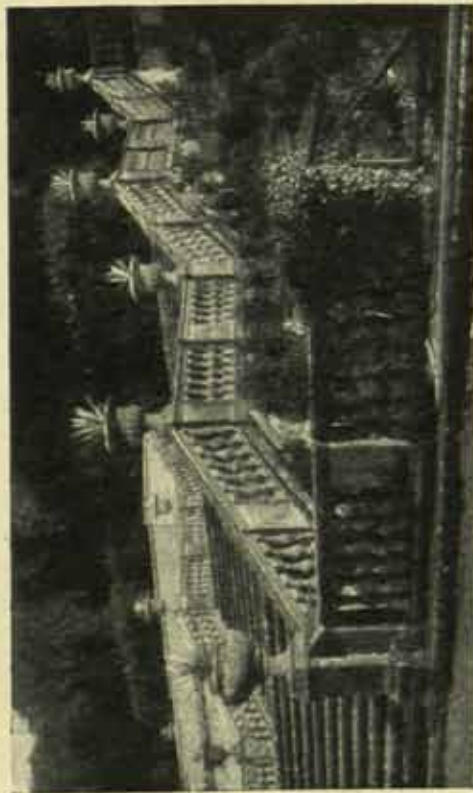


Fig. 6. — VILLA TORLONIA, FIASCATI: TERRACE STEPS.



Fig. 8. — FONTANA DEL NETTUNO, CATANIA.

weapons of their enemies. A generation after its formation the Society of Jesus was sending out from a highly organised system of schools a great number of educated men who owed everything to its teaching, and was spreading its tenets throughout Europe and the other countries of the then known world.

The ultimate triumph of the Counter-Reformation was finally secured by a thorough and drastic extermination of heresy, and a long list of persecutions and holocausts marred an otherwise admirable undertaking.

The first and most obvious result of the Church's reforms was the striking change caused in the status and prosperity of Rome as a city. From the position of a decayed provincial town she rose in a hundred and fifty years to a position of commanding importance, and at the end of the sixteenth century a great demand had arisen for churches and palaces to house the large population of clerical officials, whose number increased annually. This was no time for grovelling humanity, in the opinions of the powerful clerics who swarmed round the altar of St. Peter, but rather an occasion for proclaiming to the world in terms of solid travertine that the Holy Church was militant and triumphant, and that her standards were to be exalted among the sons of men.

So Pope after Pope welcomed and intensified the new trend of architecture, labouring in their great churches and palaces and fountains to surpass anything dreamed of by their predecessors, and Rome—the *font et origo* of the Baroque spirit—became the proudest city in Christendom.

In addition to the impetus of the Counter-Reformation, there were other influences at work to propagate this manner of building, notably the increasing attention paid to Spanish customs and etiquette. A rigid and pompous formality which well suited the proud prelates of the Eternal City had supplanted the easy and stimulating manners of the Renaissance Courts, where burghers and craftsmen mingled freely with aristocratic families in the lusty states of Central Italy. Thus heraldry—piled over an ostentatious entrance—a wide staircase planned for effect, and a feeling for the bombastic throughout became essential elements in the new architecture.

Lastly, there is to be found a parallel movement in kindred arts and in literature, just as there was in other countries at the time. As a recent writer has said :

"The reaction against the frigid classicism and degenerate Petrarchism, in which the poetry of the sixteenth century ended, led to the seeking of novelty in form and expression, exemplified in Marini, whose poetical ideal was to astonish by exaggeration, to dazzle by profusion and excess. Thus came into being 'Secentismo,' the spirit of the seventeenth century in Italian literature, which has become synonymous with what is false and unreal."

The painters of the period, too, were true to its principles, for, while religious subjects still continued popular, a bold and sometimes heavy realism characterised their work. The school of the *Tenebrosi* is conspicuous by its mastery of shadow, and not less so by its knowledge of the possibilities of the human form.

Sculpture also assumed a very different aspect during the same epoch, more naturalistic and less suggestive of the antique. At times heavy and coarse, it had the same boldness and freedom as the architecture whose willing and tractable handmaiden it became.

Thus was born the Baroque style of architecture, with the hard efficiency and self-conscious ostentation of its sponsors, but, like them, powerful, masterful, and bold, setting out to astonish the world.

III.

Rome is as truly the centre of Baroque influence as it is the capital of Catholicism, and has been so since the days of Sixtus V., when the wild herdsmen of the Campagna had but lately

ceased to pasture their flocks among its Imperial ruins. Piranesi's wonderful drawings help us to realise how completely the relics of its ancient greatness were still concealed even when an awakening spirit of interest in the antique had sprung up among its citizens. In the seventeenth century it must have been as much a Baroque city as Syracuse or Lecce is to-day, an occasional mediæval *campanile* rising at intervals among its later buildings.

Michelangelo's successors did not plunge into the new style with the recklessness that some critics have ascribed to them. There was the transition period which invariably precedes a change in architectural design, and many of its examples are far more admirable than those which follow. Giacomo Barozzi, commonly called Vignola (1507-73), and his pupil Giacomo della Porta (1541-1604) introduced many novel features into planning and detail. Their two most successful churches are the Gesù (1568, *et seq.*) and S. Luigi dei Francesi (1589), each with the prominent façade associated with the typical seventeenth-century church, but in the former case displaying a splendid breadth and dignity of treatment which was to become the pattern for all Jesuit churches in Europe. One can only regret that so fine a model produced so few worthy imitations. Della Porta's loggia on the garden front of the Farnese Palace may be compared with Michelangelo's work to show the difference in detail and the general continuity of style in their building, but in the former's charming Fontana dei Tartarughe (1585) can be seen all the best side of that fully developed Baroque fancy which was so soon to be adopted throughout Rome.

Nearly contemporary with these architects were Lippi and Vasanzio, who designed the Villa Borghese and Villa Medici respectively, and Martino Lunghi, whose Palazzo Borghese and Palazzo Altemps are his principal works. The early villas closely followed in the footsteps of Raphael, and are interesting as examples of the transition.

Pietro Paolo Olivieri (1551-99) in his great Church of St. Andrea della Valle, opposite the Gesù, moved a step forward in the direction of dome construction, while adopting Vignola's plan almost line for line, and Flaminio Ponzio developed the grand manner in his Palazzo Rospigliosi and Palazzo Sciarra di Carbognano. Undoubtedly the finest of the earlier Baroque domes is that of S. Carlo al Corso (1612), by Onorio Lunghi, a son of Martino, mentioned above. There is a bold, restrained strength here which even in more famous instances has never been surpassed.

The last of these architects of the transition were the two Fontanas, Domenico (1543-1607) and Giovanni (1546-1614), whose handiwork is so prominent in the great palaces of the Papacy—the Vatican, the Lateran, and the Quirinal—as well as in some of the larger villas at Frascati and in the well-known Church of SS. Trinità de' Monti. Their buildings vary but little from the principles laid down by the later Romans of the Renaissance, but in much of the detail a new tendency is apparent.

Among those who gave Baroque architecture its crowning and distinctive qualities there is no question as to pre-eminence, for one architect has attained celebrity thereby even among his most bitter detractors. Giovanni Lorenzo Bernini (1599-1680), like Michelangelo and Inigo Jones, combined an extraordinary versatility with great energy, and, like them, too, was blessed with a long life. He turned from architecture to landscape or scene painting, to sculpture, or to jewellery—he wrote plays and sonnets, drew caricatures, designed coaches and clothing, invented new fireworks or feminine fashions. But as architect and sculptor he became immortal. The colonnade in front of St. Peter's alone would have established his reputation, and his Scala Regia in the Vatican Palace adjoining is no less admirable. Numerous palaces must also be added to the list, and among churches S. Andrea del Quirinale, interesting in being derived from the Pantheon. Sculpture pure and simple is hardly within our province here, but Bernini was *par excellence* the master of Baroque sculpture—the apotheosis of the



Fig. 9.—PIAZZA AND CHURCH OF THE CARMINE, NAPLES.

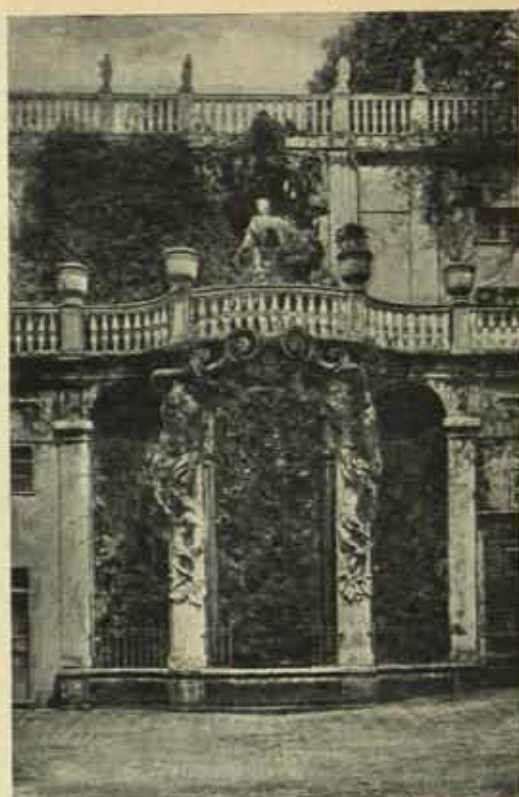


Fig. 11.—PALAZZO PODESTA, GENOA: CORTILE.



Fig. 10.—S. MOISÈ, VENICE.



Fig. 12.—FONTANA DEI CAVALLI, ANCONA.



Fig. 13.—SCHLOSS MIRABELL, SALZBURG: STAIRCASE.



Fig. 15.—THE RESIDENZ, SALZBURG: DOORWAY.



Fig. 14.—THE PFERDESCHWEMME, SALZBURG.



Fig. 16.—MOZART'S BIRTHPLACE SALZBURG: DOORWAY.

living and sentient human body. What do concern us more nearly are those of his works where sculpture and architecture cannot be distinguished apart—his fountains and his altar-pieces. Of these, the former have the greater artistic value, and constitute one of the pleasantest features of Rome in their endless variety and charm, always reminding the Northern visitor of the joy of running water in these sunny streets and—if he be discerning—of the wonderful appreciation of water by the Baroque architect. At times water was desecrated by some overbearing Colossus, such as the *Acqua Paola* on the Janiculum hill, at other times it was harnessed to some absurd contrivance to annoy a spectator, but in the majority of cases it was ennobled and glorified as the principal feature of garden or piazza. So do Bernini's fountains appeal to us to-day more forcibly than his muscular or sensuous angels perched on gorgeous altars, or their flying brethren of the heavens on the *Ponte S. Angelo*.

Nearly contemporary with Bernini was another great Baroque architect, Francesco Borromini (1599-1667), who also had a large practice in Rome. Almost all of his buildings are marked by his love of a curving line, whether in plan or elevation, and in most cases this foible led him astray. His worst, and some might say his most characteristic, design is the strange church of *S. Carlo alle Quattro Fontane* (1640-77), one of those garish examples displaying the most objectionable features of the period. In other churches—*S. Filippo Neri*, *S. Ivo*, and *S. Andrea delle Frate*—in his new interior of the Lateran church, and to some extent in his work at the *Villa Falconieri*, at Frascati, the same tendency is apparent, but in one remarkable exception—*S. Agnese*, in the *Piazza Navona* (1645-50)—he suddenly becomes great and dignified, in spite of his predilection for the curve at all costs.

Among other names familiar to students of this period should be mentioned that of Carlo Maderna (1556-1629), whose prominence arises from his having lengthened the nave of *St. Peter's* and from his familiar west front to that church. But it still remains undecided whether Maderna was responsible for the error which has for ever ruined the effect of Michelangelo's dome, or whether he was simply obeying the dictates of a vulgar plutocrat in clerical robes. His other work, at all events, betrays less of this objectionable lack of taste.

Then there were several other architects of the seventeenth century in Rome who deserve notice even in this brief survey. *Pietro da Cortona* (1596-1669) designed several churches, and among them *S. Maria della Pace* stands out—small and little known as it is—as an example of the style at its very best, in this case simple and restrained. Another excellent church is *S. Maria in Campitelli* (1665), by Carlo Rainaldi, who carried out the fine west front of *S. Maria Maggiore*, and whose father also practised as an architect. *Alessandro Algardi* (1602-1654), *Martino Lunghi* the younger (1657), and *Domenico Zampieri* (1581-1641) added to the rapidly increasing number of Roman churches; while other names are connected with the beautiful villas on the Alban Hills, where the Papal families were laying out magnificent gardens, shaded by cypresses and cooled by fountains, looking across the dusty Campagna towards the purple dome of *St. Peter's*.

The Baroque period in Rome closed with an Indian summer in the eighteenth century, when some of its greatest monuments were erected. *Alessandro Specchi's* *Spanish Steps* (1721-5), in the *Piazza di Spagna*, and *Alessandro Galilei's* vast façade at the Lateran (1734) are noteworthy, and are familiar to all visitors to Rome, but *Niccolò Salvi's* *Fountain of Trevi* (1735-62) and *Ferdinando Fuga's* west front of *S. Maria Maggiore* (1750) may be regarded as the culminating masterpieces of the period. Their late date may be explained by the fact that Rococo influence hardly penetrated this essentially Baroque city, the façade of *S. Croce in Gerusalemme* (1744) being an isolated example.

The history of the style in the rest of Italy may be briefly considered under two general heads, the North and the South, taking Rome as the point of division.



Fig. 17.—CHURCH OF VAL-DE-GRÂCE, PARIS.



Fig. 19.—SAINT-LOUP, NAMUR.



Fig. 18.—HÔTEL LAVALETTE, NOW ÉCOLE MASSILLON, PARIS.



Fig. 20.—SAN JOSÉ, MADRID.

Lombardy, Piedmont, Venetia, Tuscany, Umbria, Liguria, and the Marches form the most important section of Italy, Sicily and the South being less accessible and less familiar. In the former group Renaissance architecture had obtained a firm hold, varying its characteristics considerably in each important state or town. A Venetian school and a Florentine school are easily recognised by their differences from prevailing design in Rome. In Florence, as in the surrounding districts of Umbria and Tuscany, the Baroque movement, except in garden design, made comparatively little progress, and where a scarce example does occur it is usually only an unconventional rendering of the style which the golden age of the Medici had so deeply imprinted everywhere.

Over the Apennines, however, in the Papal States, lay a rich country which was seriously affected by the Counter-Reformation as the patrimony of St. Peter, and in many of these old, decayed cities may be found the broken pediments and bold features of the seventeenth century. In Bologna, where the last great school of Italian painting still preserved a semblance of the Renaissance genius long after all Italy, except the *Tenebroso* of the South, had laid aside its brush, a group of Baroque architects developed an interesting treatment of streets with arcaded fronts to their palaces, while many churches followed the fashion set in Rome by Bernini and his followers.

In Venice the deep-rooted tradition of Sansovino and Sammichele found its later counterpart in the work of Baldassare Longhena (1604-82), perhaps the most consistently successful architect of his day, whose three finest buildings—the Salute church (1631-82) and the Pesaro (1679) and Rezzonico (1650) palaces—lie on the immortal highway of the Grand Canal. This superb setting has enabled his masterpieces to be judged in the unaltered situations for which they are so obviously designed, and has served to divert from them the merciless abuse usually accorded to all architecture of the period. In Venice and in the adjacent lagoon towns exist numerous smaller Baroque examples, the way to Padua being lined with a rich cordon of palaces of the Venetian nobility.

Genoa had a great master of her own in Galeazzo Alessi (1512-70), who stands in relation to the movement very much as does Michelangelo, in that he pointed the way without actually venturing far along it himself, though his Porta di Molo partakes of Baroque characteristics. One of his contemporaries, Giovanni Battista Castello (1576), a painter by training, was designing a series of palaces noteworthy for richly modelled ornament as Alessi's were for bold and masterly design, and a combination of these two features inspired the huge palaces built by Rocco Lurago (1590) and Bartolommeo Bianco (1654). In these great buildings, notably the Municipio (1566), the Palazzo Balbi (1609), the Palazzo Durazzo Pallavicini (1620), and the Università (1623), is exhibited the finest type of the Italian town mansion of any period, with the exception of the Palazzo Farnese at Rome. In their villas at Sampierdarena and at S. Francesco d'Albaro, too, the Genoese evolved a more refined and restrained type than can be found on the Alban Hills.

In Milan, and especially in Turin, a prosperous nobility accepted Baroque architecture with open arms, the latter city presenting a whole museum of the period, with at least one memorable example in the Superga votive church some miles outside the city, built in 1717-31, from the designs of Filippo Juvara, most famous of the Piedmontese architects.

In Southern Italy the Baroque movement spread the more rapidly because the Renaissance had never really penetrated its mountain-bound fastnesses. Naples is full of examples, most of them barely attractive, and may be said to have a preponderance of Baroque architecture in her squalid and motley streets. All down the shores of the Adriatic—in Ancona and Foggia and Bari—all over the rough hills and littoral of Sicily, palaces, churches, and fountains of the seventeenth century abound. Palermo, Messina, Catania, each boasts a long list, and across

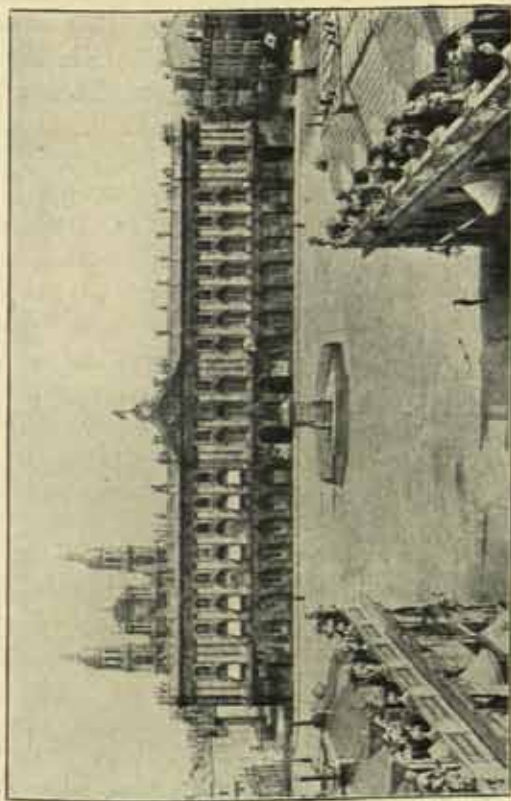


Fig. 21.—PLACE STANISLAS, NANCY.

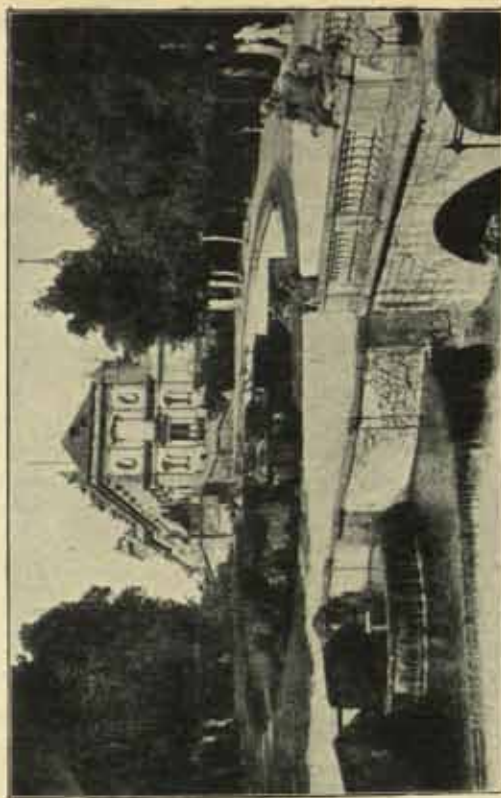


Fig. 22.—THE ROYAL PALACE, LA GRANJA.



Fig. 23.—NOTRE DAME D'HANSWYCK, MALINES: A CONFESSIONAL

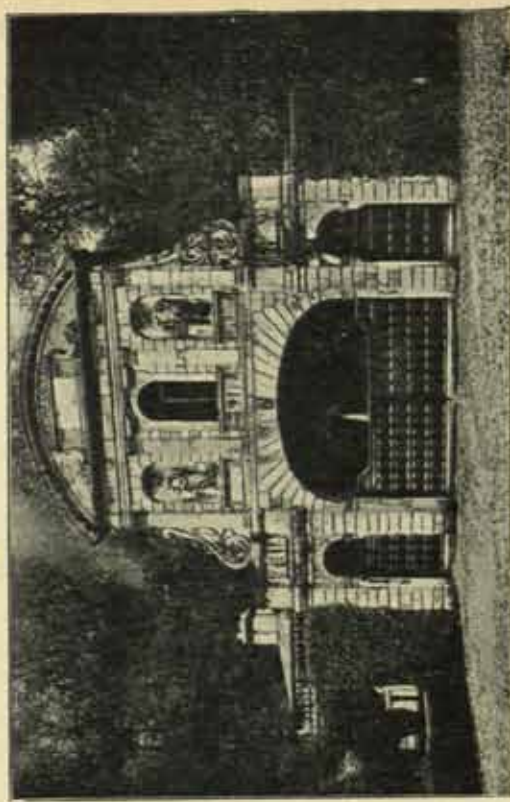


Fig. 24.—OLD TEMPLE BAR (NOW AT THEOBALDS PARK).

the sea, in Malta, the same influence may be traced. The rule of Spanish grandees during the period is not without importance, for from the outset Spanish taste was naturally sympathetic to such tendencies. But Southern Italy possesses a special interest, in that Baroque architecture there appears perhaps to its greatest advantage. Against the hard, clear blue of the southern sky, reflected in the deeper tints of the Adriatic or Mediterranean seas, and surrounded by a picturesque, uncivilised people, its vagaries become less apparent and its originality assumes an added charm. The deep shadows of its bold arches, the rich decoration of its façades, the delicate ironwork of its windows, all these seem specially suited to a semi-tropical land. And here in Lecce or Syracuse, where it is easiest to study and appreciate Baroque, the examples we find are seldom the great churches and monumental palaces of Rome or Turin, but for the most part smaller buildings in narrow, sunlit streets, built by provincial nobility and merchant burghers for worship or for habitation. Here in the blazing glare of a southern sun, among the gay tints and bustle of a remote Italian market town, may we best understand the meaning and attraction of this seldom understood style.

IV.

It stands to reason that a movement so essentially Italian in its character and origin should remain more or less an exotic in other countries. The most obvious exception, at first sight, appears to be Spain, where the Renaissance had never gripped popular taste, and where Catholic influence was particularly strong. The Escorial is almost the only large building in Spain which approximates in any degree to the *Cinquecento* in Italy, and it has established Herrera's reputation on an enduring basis.

But beyond this great example the Jesuits, who brought the seeds of the new style from Italy, found little of Renaissance days that was not grotesque or *plateresque*—in other words, a strange commingling of Gothic, Moorish, and Cinquecento detail. The Society of Jesus was founded by a Spaniard, and his native land was one of the first to feel the effects of his missionary and educational zeal. The principal Baroque buildings in Spain were connected with Jesuit churches or Jesuit schools, although, as in Italy, the fountain, the garden, the triumphal arch, and such like trappings of towns and mansions began to acquire a new importance. The celebrated Puerta de Alcántara at Toledo, the Arco de la Focisla at Segovia, the Archbishop's Gate at Seville, and the fountains in the Place of Oranges at Cordova, all illustrate this tendency in minor work, the Toledo Bridge at Madrid (1732) being larger and leaning to Rococo. The largest scheme of civic adornment is to be found in the Plaza Mayor at Salamanca (1710-80), a fine square, with the Town Hall forming part of one side, all in a late Baroque style. Salamanca was the seat of a University and the chief educational centre for all Spain, hence the headquarters of the Jesuits and the most Baroque city in the country. Their Seminario Conciliar, or Colegio de la Compañía (1617-1750), was their largest institution, and was of vast dimensions, with a great domed church as its principal feature. The University at one time comprised forty colleges, many of the seventeenth century, and numerous Baroque churches were provided for the spiritual welfare of the students. Seville, Granada, Madrid, Cordova, Valencia, and Toledo all possess numerous examples of the period, and La Granja, near Madrid, is an important group of buildings and gardens by Juvara and other Italians. At Loyola is a huge church (1682) commemorating the founder of the Jesuit order, and at Santiago de Compostella the cathedral is one of the largest and most elaborate churches of the Baroque period in Spain.

Belgium, though in a different part of Europe, was affected by very similar influences from Italy, and the most important instances of the period are to be found in the Catholic centres, such as Malines and Brussels. A factor which is sometimes overlooked is the part played by

Rubens in buildings at Antwerp, for this great painter was suffused with the spirit of Baroque. Jesuit churches at Brussels (1657-76), Malines, Louvain (1650-6), Bruges, and Antwerp confirm the tendency indicated elsewhere, the first three being the work of Luc Faid'herbe, of Malines, the most prominent Flemish architect of his day. Primarily a designer of churches, his work also included various town houses in Malines, which are less ostentatious and bizarre than those rich buildings which the Jesuits erected all over Continental Europe for the nominal purpose of devotion. There is much of interest in smaller works of the period—doorways, fountains, choirstalls, and pulpits—but no mention of Belgium would be complete which omitted a reference to the remarkable Guild Houses built during the seventeenth and eighteenth centuries on the Grande Place at Brussels, typical of Baroque domestic architecture in this land at its richest, quaint and attractive.

Protestant Holland under the sober sovereignty of the Orange princes never embraced this distinctly Catholic style with enthusiasm. Her architecture always closely resembled that of Germany, and her gabled houses changed but little with the addition of Baroque elements, till the severer classic forms, which in England we dub "Queen Anne," ousted all ribald mannerisms from the field. No greater contrast could be imagined than between the barn-like simplicity of the Dutch meeting-house and the garish profusion of the Jesuit churches in Belgium.

In Germany a similar division differentiates the seventeenth-century architecture of Protestant and Catholic States. The southern and western States, with part of Switzerland and all modern Austria, were largely Catholic, Protestantism being chiefly confined to Prussia. The former territory was the part of Germany where Baroque architecture was introduced to any appreciable extent, and may be regarded for our purpose as one homogeneous whole. North of the Alps the Renaissance had assumed a totally different aspect from that which it had worn in Italy. As in England, a strong Gothic tradition still persisted, and the plentiful admixture of Italian detail produced a result clearly akin to our own Elizabethan or Jacobean styles. It is a common error among critics to classify any markedly elaborate building of this nature as Baroque, in the face of all logic and facts. If the term Baroque is simply an adjective, it may be applied to buildings of the first centuries of our era with as much appropriateness as to works of the seventeenth century; but if the authentic definition is to be accepted, as it now generally is, then there is a Baroque period following the dying Renaissance in a strictly logical sequence. So also in these northern countries is there a distinction—difficult though it may be to draw—between the Baroque which came with the Jesuits from Italy in the early seventeenth century and the Rococo which originated at the French Court of Louis XV. about a hundred years later. Of the former variety numerous examples exist at Prague and Salzburg; the latter is represented in the Zwinger Pavilion (1711-22) and the Frauenkirche (1726-38), at Dresden, while in the great buildings of the two Fischers von Erlach in Vienna and other parts of Austria may be seen a transitional type. The familiar bulbous, lead-covered spire which one sees all over Southern Germany and Austria is usually an indication of a Baroque design below, and the important buildings of the period are far too numerous to mention. Here and there are vast conventual establishments, such as that of Melk, on the Danube, or Ensiedeln, in Switzerland; strange and beautiful villas and gardens, like that of Schloss Hellbrunn; great châteaux of princes, such as the Residenz in Würzburg; quaint town halls, like the Rathhaus at Bamberg; fountains and statues; and, above all, Jesuit churches. In Prague, Salzburg, Vienna—to a less extent in Munich, Bamberg, and Würzburg—we have practically Baroque cities.

The conditions in France again differ from those in any country previously mentioned. The vigour and strength of French architects during the Henri Quatre period had dispelled all the bastard Renaissance of the type so frequently met with in the châteaux of Touraine and

in certain churches of Paris. Under such masters as Salomon de Brosse, and under the Italian-loving patronage of Marie de Médicis, a parallel movement to that prevailing in Rome was set in motion, fostered by the inevitable Jesuit incursions. Typical of the one is the Medici fountain in the Luxembourg Gardens, of the other the Church of St. Pierre et St. Paul in the Rue St. Honoré, both in Paris. The mature Baroque appears in the Val-de-Grâce Church at Paris and in the larger buildings of Nancy, near the German border, while an interesting—because inexplicable—instance of over-developed Baroque appears in a church at Nevers. Examples of this kind are plentiful enough near the Belgian border, where their origin is obvious, but this case at Nevers forms a baffling problem for the architectural historian. In Paris—especially in the older quarters round the Rue de Rivoli—and in most French provincial towns another aspect of Baroque design is to be found, in the rich doors and courtyards of many fine old town houses built in the late seventeenth and early eighteenth centuries.

Lastly, even we in England have not remained altogether immune from the influences of this egregious style. It is true that we have had no Jesuit invasions, and that our country has remained Protestant as a whole. It should also be recognised that the caprices of our Jacobean architects are Baroque rather in the spirit than in the letter, and that in the stately or the absurd plan we find late Italian influence rather than in matters of detail. But in Inigo Jones' York Stairs (still more in some of his drawings), in Wren's steeples, and in Temple Bar, even in his planning and his domes, in much of his decoration, and in some of Gibbons' carving, most of all in Vanbrugh's vast palaces at Blenheim and Castle Howard, may be found the exact counterpart of Baroque architecture abroad.

V.

In a singularly illuminating passage in one of his essays Walter Pater has something to say of the functions of criticism.

"Theories which bring into connexion with each other modes of thought and feeling, periods of taste, forms of art and poetry, which the narrowness of men's minds constantly tends to oppose to each other, have a great stimulus for the intellect, and are almost always worth understanding."

It is to be feared that few people have stimulated their intellects on the problem of the position and value of Baroque architecture, or on its relation to the Renaissance and to our own day. The narrowness of men's minds has for too long locked the gate and pocketed the key, so that no one knows what is within.

But now the lock has been forced, and in the steady increase of interest in the subject may be seen a dawning comprehension that this style may have a certain worth, and, though it may never be sanctioned for study among aspirant youth, elders and betters are already freely borrowing from its stores for their vulgar strife in competitions. It is still heresy to appreciate its virtues, but its boldness offers convenient hints for many an English public building and many a surreptitious detail.

Let us then take heart of grace and approach the thing in all its awful horror with the pure Arthurian soul of an Institute examiner. It is not to be denied that the greater number of examples of this period, if divested of the spirit and surroundings of their age, display a bald and heartless materialism which is fortunately lacking in all the greatest achievements in art. The age of Pericles has this in common with the age of Bramante, that in it the service of beauty became a religion, and, though neither of these ideals is comparable, in the writer's mind, with the more lofty if less enlightened aspiration of the Gothic craftsmen, yet each of them surpasses by far the meretricious pride of the seventeenth-century Jesuits and the conscious ostentation of much Baroque architecture.

The greatest error committed by these builders lay, not in the magnificence nor even in

the originality of their work, but in its shameless disregard of scale and sobriety. There are churches in France and England of the purest Gothic architecture, loaded with mouldings and ornament till hardly a bare stone remains, which yet contrive not to offend a single canon of taste. On the other hand, there are Baroque buildings comparatively simple in design where almost every line contravenes an axiom of good art. This unfortunate failing is due to the underlying spirit which inspired architect and wealthy patron alike—the spirit of pride.

Moreover, although the seventeenth century witnessed the afterglow of the Counter-Reformation, its churches produce a more general effect of utter paganism than any others erected before or since that time. There is more devotion implied in the bare walls of an old village meeting-house than in the blazing decorations of the Gesù church at Venice.

But, having admitted these serious and undeniable drawbacks, there is much to be said in favour of Baroque architecture from the strictly architectural point of view. The Renaissance, as Michelangelo and Palladio left it, had not quite run its course in Italy, and had not seriously begun its career in other countries. When it attained its highest point—in England and France—much of its value was derived from Baroque developments in Italy.

For there was an actual development and advance from the work of Michelangelo and Palladio to that of Bernini, Longhena, and Bianco. More especially is this evident in planning and in the general disposition of the parts of a building. That very pride which so often is the undoing of the style was its greatest asset in certain respects. The magnificent staircases and terraces, gardens and fountains of the seventeenth century are a step forward from Michelangelo's day. Town-planning, as we understand it, was first seriously undertaken in Baroque Rome. The Piazza di S. Pietro, the Piazza del Popolo, and the Piazza Navona are typical instances of civic design on the grand scale, and in France, Spain, and Austria many similar cases are to be found. It would be a mere work of supererogation to mention any of the villas and gardens which are so characteristic of the period, and which again mark the advance from Cinquecento times. The design of windows and doors shows a distinct progress of evolution, while the palatial staircase may be said to be a Baroque invention. The art of wrought iron underwent many improvements, and decorative sculpture only ceased to be uniformly successful when their very brilliance and facility led its masters astray. The Baroque dome appears in countless forms, and is usually worthy of most careful study, if not of admiration. In Austria especially a new type of campanile or tower was produced which adds picturesqueness to most of its towns. The close attention devoted to matters of ornamental detail had a good effect in substituting for the portable picture a more permanent treatment with panelling, so that painting became an integral part of a mural composition. Modelled plasterwork assumed a new importance, and seventeenth-century artists acquired an almost fatal ease with this material.

But the strongest point in favour of Baroque architecture as a whole is a certain inherent breadth and splendour of conception which, wherever it is found, seems to indicate its double origin in the traditions of Imperial Rome and in the greatness of the Catholic Church. The most famous buildings of the Renaissance are isolated palaces and churches scattered in crowded streets or on lonely hillsides, with but little regard to surroundings. The Baroque architect, on the other hand, appreciated the possibilities of a site, and placed his greatest works with consummate skill. The masterly grouping of Kloster Melk or of the Salute is wonderful, as are the perfect lines of S. Maria della Pace in Rome.

Finally, in venturing to criticise this long period of historical architecture, the architect must not forget its contemporary setting—the sumptuous, heavy furniture, the glittering candelabra, the wealthy cardinals, with their gorgeous retinues in an age of dazzling pomp. Is it to be wondered at that we, with our sombre garments, our anæmic over-civilisation, and our electric trams, feel a sense of something inappropriate in the *milieu* of a Baroque city? Realising this only we may attain a clearer understanding of its architecture.

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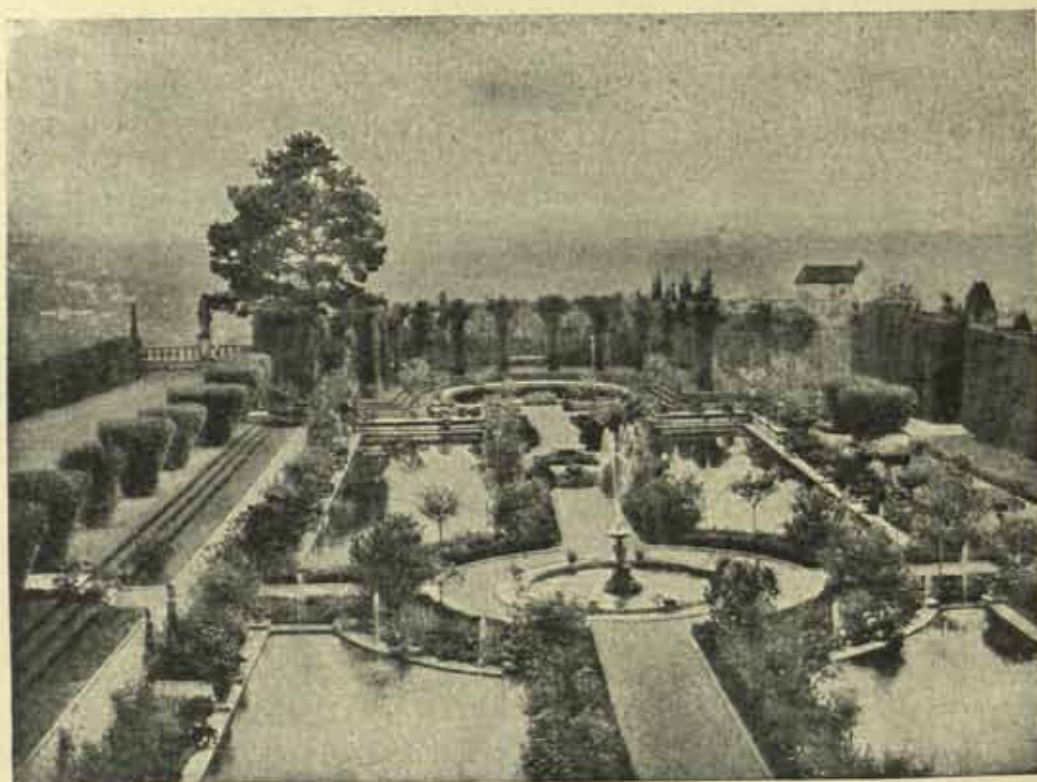
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THE MODERN WATER PATERRE AT VILLA GAMBERAIA, NEAR FLORENCE.
From *Garden Craft in Europe*.

REVIEWS.

GARDEN CRAFT.

Garden Craft in Europe. By H. Inigo Triggs, Author of "Formal Gardens in England and Scotland," "The Art of Garden Design in Italy," &c. 40. Lond. 1913. 35s. net. [B. T. Batsford, 94 High Holborn.]

Mr. Inigo Triggs has made the subject of gardens his own. We have the result of his earlier labours in *The Formal Gardens of England and Scotland* and *The Art of Garden Design in Italy*. Now we are further indebted to him for a quarto volume on "Garden Craft in Europe." This is a well-illustrated epitome and compendium of handy size which will be esteemed by the architect and the "gardenist" as well as the general reader. It may also be commended to those local authorities and town-planning experts who are studying how to improve the surroundings of our open spaces and buildings.

The volume is published by Batsford in the excellent manner now a familiar tradition of this house, surely worthy of honorary recognition by architects. It is provided with a good index and "bibliography of the principal works treating of European garden design and its history, together with the names of the chief engravers of views of gardens."

The book does not pretend to be an exhaustive study of garden craft, but it covers a wide chronological period, describes some of the best and most typical gardens in Europe and gives much information on the subject. There is a similarity about the gardens of all nations which shows how cosmopolitan are the principles, and how gradual the evolution of their design.

Garden planning is first found in Europe in the courts and peristyles of Classic Greece, and later in Rome. These were integral parts of the house and echoed its proportions, balance, and rhythm. The excavations at Pompeii have shown us many beautiful examples, usually small. In such an environment they must have been delightful, with their light and elegant columns, delicate decoration, marble and bronze figures. Trees and plants must have further added to the charm. These were necessarily pleached and clipped to restrain their growth within reasonable limits, thus probably originating topiary work.

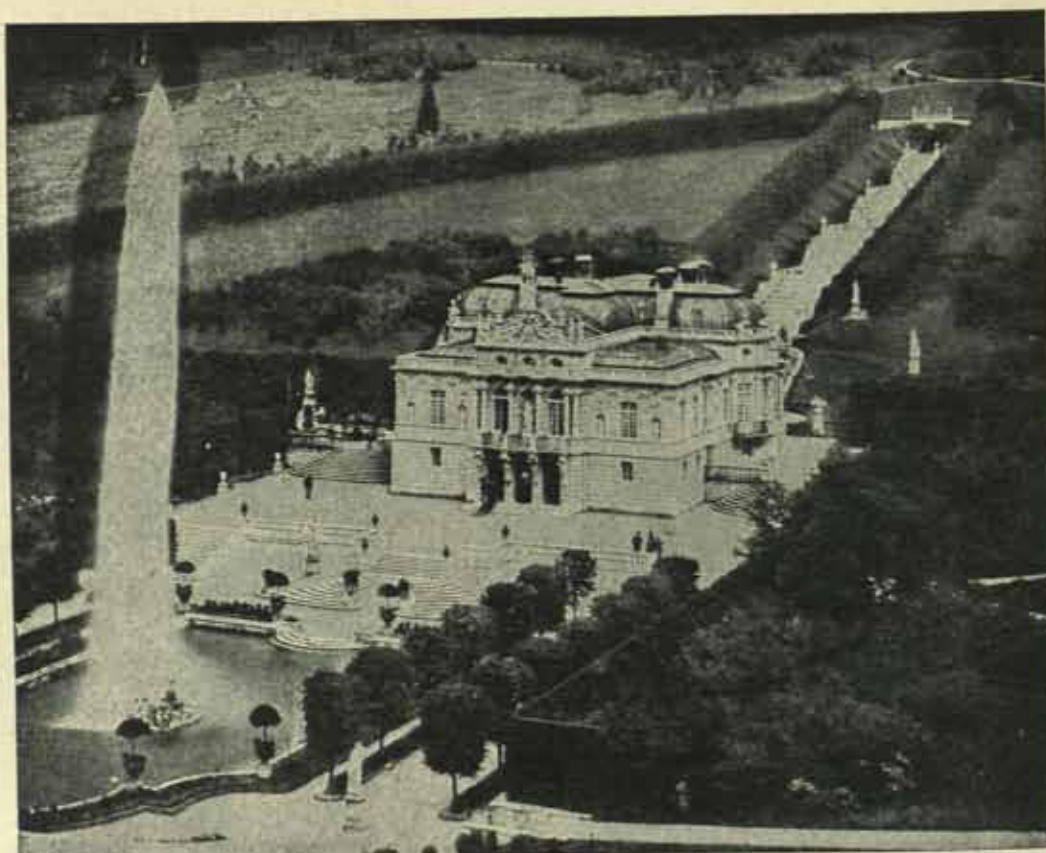
In his second chapter Mr. Triggs briefly describes mediæval gardens, and for want of better records he illustrates them by "stray pictures" from breviaries, missals, &c. These contain delightful suggestions. Some have been adopted in modern work. The strictly circumscribed areas of towns and castles within their moats and entrenchments

necessarily militated against undue size of gardens and their irregularity against symmetrical planning. The revival of the ancient Classic traditions with

the Renaissance, a period of intense vitality, full of the joy of life, was on grand and sumptuous lines. Vignola, Giulio Romano, Du Cerceau, Le Nôtre,



VERSAILLES: GROUPS OF CHILDREN ROUND THE PANTHERRE D'EAU, BY LESPIONOLA.
From *Garden Craft in Europe*.



THE CASTLE OF LINDERHOF.
From *Garden Craft in Europe*

Inigo Jones, and Sir Christopher Wren are splendid names associated with garden design at this epoch, and their names attest the scholarly beauty and architectural character of the gardens of this age.

Italy first felt the effect of the awakening, and Mr. Triggs gives an interesting account of its characteristic garden architecture. He has only sparingly drawn upon his earlier folio, and any extension of this subject must necessarily repeat much that is there published.

There are three chapters on French gardens, and the author has largely relied on old engravings for his illustrations of these, supplemented by photographs of some exquisite sculpture and accessory details. Le Nôtre is the dominant figure amongst the great garden-designers of France. His mind soared above ordinary mundane restrictions, and his power and imagination were amazing. Like Michael Angelo, he dwarfed all other personalities in his art, and in no other projects can be better seen the immense vitality and magnificence of the Renaissance and the extent of the reaction from the narrower conditions of mediæval existence.

Mr. Triggs writing of the Netherlands refers to a period when "it seems to have been the ambition

of every owner to have his garden engraved, and these engravings, together with the surveys, prepared to show the drainage of the polders, enable us to study the plans of practically every country seat in the north of Holland." It is something to possess so valuable a record of the garden craft of the Low Countries. An interesting selection of these is reproduced.

English formal gardens are happily described. In a measure they owe their charm to our climate, which favours growth. There are no trees and lawns like ours, and no better background can be found for garden effects. The simple reticence of English parterres tapestried on the greensward, with the sparing use of architectural embellishment, makes our old gardens beautiful places of rest and recreation.

The gardens of Germany and Austria occupy another chapter, and, as in the case of the Netherlands, the engravings of Merian and others have been borrowed for purposes of illustration.

The Moorish occupation of Spain left a record of wonderful architectural achievements, and Mr. Triggs refers to the beauty of their gardens. Such gardens as the Generalife and the courts of the

Alhambra may be taken as some evidence of the height to which Moorish civilisation attained.

In the nineteenth century the love of beauty seems almost to have died, and the landscape school of garden design is one of the unhappy phases of the decline of art. Mr. Triggs refrains from publishing plans of this school. The *jardin anglais* has still a baneful influence on the Continent. It marks an epoch that rejected tradition and toyed with mediævalism, and failed to realise that the garden should be co-ordinate with the house.

When garden design, painting and sculpture became divorced from architecture they lost that practical need and expression which gave them character and significance, as is becoming recognised, and books such as this, written by an architect practised in design, are of wholesome influence and of happy augury for the future.

HERBERT WIGGLESWORTH [F.].

THE ASIATIC FRINGE.

The Fringe of the East: A Journey through Past and Present Provinces of Turkey. By Harry Charles Lukach. 80. Lond. 1913. 12s. net. [Macmillan & Co., St. Martin's Street, W.C.]

Mr. Harry Lukach, the author of this exceedingly interesting contribution to "Near East" literature, brings to bear upon the subject a refined sense of humour, a keen appreciation of art, and a very exhaustive and reliable fund of historical erudition. Although not, strictly speaking, perhaps, within the bounds of an architectural review, still there is a great deal in the book which throws fresh light on certain architectural monuments of the Asiatic "Fringe." A reference to Eastern monasteries brings into prominence the curious fact that their enormous numbers in relation to the population and area of the district must have always prevented the growth of any large and important monuments such as we associate with the monasticism of the West. A long and exhaustive account of Athos, with excellent illustrations, is of special interest at the present moment, when that remarkable centre of the Orthodox world seems to be in a state of revolution.

The architectural photos are excellent in almost every case. The interior of Ay-Sofia, the cathedral of Nicosia, does not perhaps quite do justice to its actual dimensions. This is due possibly to the view being taken from aloft at the west end, a position which always seems to have the effect of diminishing the size of an interior. The empty bareness of the building since its conversion into a mosque may also tend to the same effect.

Amongst the grand crusading castles of Cyprus and the Holy Land Mr. Lukach wandered with a sympathetic spirit. Hilarion, and the mighty Baniyās, and, perhaps most wonderfully preserved of all, El Hosen, afford material for description and charming photos. The last-named castle has not been photographed since the days of Rey's

Architecture Militaire of fifty years ago, and much dilapidation has taken place during the interval.

Towards the end of the book there are several architectural photos which will be new to students of Saracenic art. The great mosque of Hama (perhaps better known as Hamath) possesses some peculiarities of design, and there is an imposing view of the great fortress of Aleppo. To judge by some of these photos the North Syrian Moslem buildings are often completed by the addition of a heavy flat stone cornice supported on corbels in three or four courses which project several feet from the wall.

The photos of the great mosque at Damascus are interesting as showing the results of its "restoration" since the great fire of a few years ago. A printer's error must be pointed out in the case of a photo which passes under the name of the Synagogue, Nazareth, which is in reality a view of some Orthodox church interior.

Mr. Lukach is to be complimented on having produced one of the most readable and entertaining books in the vast domain of travel-literature of the moment, and all the more notable because the Near East is every day becoming so much nearer and its bypaths well worn by the feet of the tourist.

Cyprus.

GEO. JEFFERY, F.S.A.

ESTIMATING.

How to Estimate: being the Analysis of Builder's Prices. By John T. Rea, Architect and Surveyor. Lond. 1913. Price 7s. 6d. net. [Batsford.]

The usefulness of this book is so widely recognised that any general criticism of its quality is superfluous. This, the fourth, edition has been thoroughly revised, and extensive additions have been made both to text and illustrations, the former being increased from about 410 to 530 pages, and the latter from about 40 to 400 figures.

The chapter on "Cost of Buildings," which now includes particulars of the cost of about 170 actual buildings as well as a large number of estimated figures, has been expanded from six pages to thirty. Where the prices are those of actual buildings the dates of erection are in most cases given; this is a point which has been overlooked in some books, so that the prices become useless for comparison with those of new works, because the reader has no opportunity of allowing for fluctuating, and generally increasing, rates of cost of materials and labour.

An instructive note upon the increasing uses of electricity in connection with builders' plant has been added to the chapter on "Labour."

In the chapter headed "Pavior," it is stated that the life of asphalt paving is from 15 to 20 years. This, in cases where the surface will be subjected to fast and heavy street traffic, is a little misleading, as the speed of destruction varies so much with position and circumstances. In some London

streets the combined influences of the hot sun and motor traffic have recently proved so injurious that it has been found impossible to make asphalt last even 15 months, and granite has been substituted. To this ("Pavior") section of the book great additions have been made in order to embody information upon modern road construction.

Much labour has evidently been devoted to the production of this new edition, which is decidedly an advance upon its excellent predecessors.

MAT. GARBUTT [F.].

STRUCTURAL ENGINEERING.

Structural Engineering. By A. W. Brightmore, D.Sc., M.Inst.C.E., sometime Professor of Engineering at the late Royal Indian Engineering College, Coopers Hill, Joint Author of "Waterworks Engineering." 2nd edition. 10s. 6d. net. [Cassell & Co. Ltd.]

The fact that a new edition of this book has been required within five years of the date of first publication proves that the work has found favour among the class of engineering students for whom it was principally written. The close connection between the subject of structural engineering and certain branches of architectural construction—a connection so intimate that to many of us there is no valid distinction—naturally raises the question of to what extent the present book is likely to be of service to architects. The rather desperate conclusion to which I have regretfully been driven is that there are not more than perhaps a dozen men in the architectural profession to whom the work can be recommended. The writer, in common with the majority of teachers in engineering colleges, considers the subject of structural engineering primarily from the mathematical standpoint; whereas persons who are constructors first and, if at all, teachers afterwards, deal with these problems from the constructional point of view, the mathematical solution being very justly treated as a secondary question. The architect, in common with a large number of engineers in practice, is, fortunately for his work, among this latter class, and although his knowledge of the mathematical branch of his studies is often capable of considerable improvement, such will result not from a perusal of abstruse text-books, but from a study of the main principles of applied mathematics and mechanics. A conscientious study of the present volume by the average architect would result only in the undermining of his existing limited knowledge of structural mechanics, and in the intensification of his dislike of the subject. For this, of course, responsibility rests by no means with the author, but with the upholders of a perverse custom which makes of architecture and structural engineering two professions, taught, however nearly they may approach one another in the case of practical work, from widely differing standpoints.

HORACE CUBITT [A.].

THE PRESERVATION OF DECAYING STONE.

The Science Standing Committee of the Royal Institute of British Architects has recently had some communications from the Society for the Protection of Ancient Buildings, which has courteously placed at its disposal the experience it has gained up to the present in the matter of treating decayed stone, and I have been privileged with the charge of submitting a *précis* of the above Society's statements for the benefit of readers of the JOURNAL as a subject of general knowledge.

The Society prefaces its remarks by saying that no process can be regarded as final—though many have most valuable results—and that masonry needs continual attention, especially in districts where the atmosphere is charged with sulphur.

Previous to any treatment the Society recommends the removal with stiff hair-brushes of the crumbling surface, except where this would obliterate fine carving, and the raking out of loose joints, and that in these operations steel tools and wire brushes are never to be used. When bituminous deposit is present on the surface of decaying stone it must be removed before the preservative solution can reach the stone. Where this cannot be effected by brushing alone, a jet of steam will soften the deposit. An acetone paint-remover may be used to assist this process.

Joints are then made good in "good hydraulic lime mortar," and where the mortar would otherwise be in large masses pieces of well-burnt hand-made tiles saturated in water should be inserted to prevent shrinkage in setting and so causing cracks. Also by wedging pieces of tiles firmly into the joints or into chases cut for the purpose the mortar gains much strength.

The writer may here draw attention to the growing recognition of the truth of the contention that Portland cement exercises a deleterious action on stone, a matter upon which researches are being made by an International Committee.

For treatment of stone containing a large percentage of lime, hydrate of barium is recommended (about 1 lb. of the crystals to a gallon of soft water, frequently agitated in a closed vessel). It might be remarked that this quantity would hardly dissolve in cold water, which can carry in solution about 7 per cent. at 40° C., 18 per cent. at 60° C., and as much as 90 per cent. at 80° C. The solution is very caustic and should be preserved out of contact with the air or it will soon exhibit a milky deposit and lose its virtue, but it may be kept in closed vessels indefinitely. It should be freely dabbed on with a soft brush, and the drier the stone and atmospheric conditions the better the result. As many as 50 coats at intervals are recommended in bad cases. The Society gives an interesting report received from Mr. Riley, the Superintending Architect to the London County Council, of the recent treatment of York Water

Gate by the above method. Here, after the removal of two cwt. of deposit of dirt and soot in addition to stalactites and bituminous matter which had to be softened by the use of steam, 354 yards super of Portland stone, after repointing with mortar, were treated during the advantageous conditions of the dry summer of 1911. Twelve to thirty coats of baryta (eighteen on the average) were given to the stone, and an analysis after a month proved that penetration had taken place to a depth of $\frac{3}{8}$ inch. It should be explained that unless the lime in the stone has been converted into a sulphate baryta water will not enter into combination, and so the particles of still sound stone may remain open to attack by sulphur-laden atmosphere.

The monument above mentioned is in so central and accessible a position, and so near (much of it below) the surrounding gardens, that it should form a valuable object-lesson to Londoners interested in assessing the merits of the process.

Another process referred to is that in which a solution of sodium silicate (water-glass) is applied and subsequently one of sodium arsenate (a chemical used in calico-printing.) The result is stated to produce a binder and filler—possibly chemically unstable—rather than a stone re-constructer; certainly any chemical interaction between these compounds seems doubtful on theoretical grounds.

For sandstones the Society has no specific except to suggest the application of fillers such as alum and soft soap or paraffin wax in solution in some mineral oil, neither very lasting, as the report itself states.

Finally a thin coating of lime-wash made from fresh lime and boiling water and applied in two or three coats is strongly recommended as a general preservative, with such inert colouring matter (as for example umber) in the last coat as is required to tone with the surrounding work.

It is stated that this process has been adopted at Westminster Abbey. The writer certainly knows of one case in which this method was most effectively applied to a decayed Jacobean coat-of-arms in limestone in high relief and in a damp and sunless situation, whilst almost adjoining a new building was suffering from rapid decay after recent treatment with a patent preservative.

As to sandstones, it would be interesting to try the effect in some practical case of allowing a solution of pure silica to flow slowly (as from a sparge pipe) over the decayed work for a reasonable period. A 5 per cent. solution of silica in water is obtainable, and on evaporation the silica deposited will readily become insoluble, and should thus act as a cementing agent, though the process would be slow.

ALAN E. MUNBY,

Chairman of the Science Standing Committee.

May 1913.



9 CONDUIT STREET, LONDON, W., 26th July 1913.

CHRONICLE.

The Revised Schedule of Charges: Further Adjournment.

The adjourned Special General Meeting arranged for Monday, 7th July, to resume consideration of the draft Revised Schedule of Professional Charges, had to be abandoned for want of the necessary quorum under By-law 67. The By-law requires the presence of 40 members, of whom at least 21 must be Fellows, but there assembled only 35—viz. 19 Fellows (including the President and 10 members of the Council), and 16 Associates (including one member of the Council). The Session, which ordinarily closes in June, had been extended till the end of July in the expectation of getting the document through before the recess, but the whole business now stands over till next Session.

Town Planning and Main Roads: R.I.B.A. Deputation to the Prime Minister.

The deputation from the Institute to the Prime Minister on Thursday, the 3rd July, was the outcome of a conference held over a year ago between the Institute and other interested bodies, the purpose of which was to devise means of impressing upon the authorities the necessity of co-ordination in the making of main arterial roads and the framing of town-planning schemes. As a result of the conference the following letter was addressed from the Institute to the Prime Minister:—

12th July 1912.

SIR,—A conference convened by the Royal Institute of British Architects, consisting of representatives of the Royal Institute of British Architects, the Royal Academy, the Institution of Civil Engineers, the Surveyors' Institution, and the Institution of Municipal and County Engineers, who are deeply interested in the development of Greater London, has been considering the serious position which is likely to arise owing to the fact that numerous Town Planning Schemes are being prepared for the districts surrounding London without any power existing to co-ordinate these different schemes, and to secure the carrying out by these schemes of the recommendations as to main roads which have been made both by the Royal Commission and by the Traffic Department of the Board of Trade in their valuable reports.

These Town Planning Schemes have to be approved by the Local Government Board, but they come singly, and the Board has no power to guarantee to any Local Authority that if it provides a portion of a main road running through its area, the remainder of that road will be carried out by the abutting authorities, nor has the Board any power to apportion the cost of such a main road equitably among these different authorities.

At present the authorities concerned are so numerous and disconnected that concerted action is hardly possible. The different bodies having rights and powers with regard to the making and planning of roads within the area of Greater London are as follows:—

The London County Council possess exclusive powers under the Town Planning Act within the Administrative County of London, and without their consent no joint body can be set up under Clause 55 of the Act.

The Local Government Board have power to supervise, amend, and approve action taken by Local Authorities under the Town Planning Act; power to call upon the L.C.C. and other Local Authorities to prepare a Town Planning Scheme.

The London Traffic Branch of the Board of Trade have power to spend a certain sum in studying traffic problems and issuing reports upon them.

The Development and Road Board have power under the Development and Road Improvement Funds Act (a) to make advances to highway authorities for improving existing or making new roads, (b) to construct and maintain any new roads. The Road Board acts through

The Treasury, who before approving the construction of a new road must consult the Local Government Board, and also be satisfied that notice of intention to construct has been sent to every highway authority affected.

Greater London.

Outside the L.C.C. area Town Planning powers under the Act are possessed by:—(a) The Councils of all Boroughs; (b) The Councils of all Urban Districts; (c) The Council of all Rural Districts, or a total of some 70 or 80 different authorities. It will, therefore, be evident that the consistent, dignified, and practical development of Greater London is a subject of great and pressing difficulty. No authoritative expert body exists empowered to deal with the main roads of the Metropolis as suggested by the Royal Commission, to co-ordinate the work of the different Local Authorities, and secure the planning and construction of the main arterial roads that are required to accommodate the traffic of Greater London.

The Conference of institutions interested in the subject is sure that the importance of the proper development of London is present to the mind of his Majesty's Government, and requests you to receive a small deputation to express its view that it is necessary to co-ordinate existing bodies for the special purpose of creating a system of main roads for Greater London.—We have the honour to be, Sir, your obedient Servants,

REGINALD BLOMFIELD,
President of the Royal Institute of British Architects.

EDWARD J. POYNTER,
President of the Royal Academy (in support of the Royal Institute of British Architects).

EDWARD G. STRUTT,
President of the Surveyors' Institution.

R. J. THOMAS,
President of the Institution of Municipal and County Engineers.

W. C. UNWIN,
President of the Institution of Civil Engineers.

The Prime Minister replied promising to give the subject his consideration, and after the lapse of some months his attention was again called to the matter in the following letter:—

24th May 1913.

SIR,—We beg to draw attention to our letter of 12th July, asking you to be good enough to receive a deputation, and to hear its views as to the necessity of either appointing some Central Authority or conferring the necessary authority on some existing body to control the development of a system of main roads for Greater London.

We venture to point out that the action which it is urgent should be taken at once to secure the routes of these main roads need not entail a large present outlay, but would have the effect of avoiding a very heavy expenditure when, at some future date, the carrying out of the scheme of roads has to be taken in hand.

We wish to take the opportunity of emphasizing the extreme urgency of this matter. A very large number of Town Planning Schemes for Greater London are now maturing, which include areas traversed by some 40 out of 120 miles of new main roads recommended by the Traffic Department of the Board of Trade, and we beg therefore to press for an interview at the earliest possible date.

We have the honour to be, Sir, your obedient Servants,

REGINALD BLOMFIELD,
President of the Royal Institute of British Architects.

W. C. UNWIN,
President of the Institution of Civil Engineers.

EDWARD G. STRUTT,
President of the Surveyors' Institution.

R. J. THOMAS,
President of the Institution of Municipal and County Engineers.

PLYMOUTH,
President of the London Society.

The Prime Minister, in reply, consented to receive a deputation, which it was arranged should wait upon him in his room at the House of Commons on the 3rd July. The following representatives attended on behalf of the bodies interested:—

For the R.I.B.A.: Mr. Reginald Blomfield, A.R.A., Sir Aston Webb, C.B., C.V.O., R.A., Mr. H. V. Lanchester, Professor A. Beresford Pite, Professor S. D. Adashead, Mr. W. H. Seth-Smith, Mr. Raymond Unwin, Mr. Ian MacAlister, Secretary.

For the Surveyors' Institution: Sir Alexander Stenning, Mr. Leslie Vigers, Mr. H. Chatfield Clarke.

For the Institution of Municipal and County Engineers: Mr. H. E. Stilgoe, Mr. J. W. Cockrill, Mr. R. J. Thomas.

For the London Society: Mr. Raymond Unwin, Mr. Carmichael Thomas, Colonel Yate, M.P.

The deputation was received by the Prime Minister and Mr. John Burns, President of the Local Government Board, accompanied by Mr. J. Herbert Lewis (Parliamentary Secretary to the Local Government Board), Sir George Gibb (Chairman of the Road Board), Sir A. C. Monro, K.C.B. (Local Government Board), Mr. M. Bonham-Carter (Private Secretary to the Prime Minister), Mr. F. L. Turner (Private Secretary to the President of the Local Government Board).

Mr. REGINALD BLOMFIELD, in introducing the deputation, said their object was to lay before the Government certain considerations with regard to the planning of main arterial roads out of London, and more particularly in regard to the absence of co-ordination between the various authorities which had to deal with this matter. They wished to urge the establishment of some central authority to hold the balance between the

various interests, which would be able to handle the matter from a more comprehensive point of view than was open to any of these authorities individually.

Sir ASTON WEBB, speaking on behalf of the Royal Institute, said the importance and necessity of main roads out of London and their inadequacy at the present time were accepted. At the recent Road Conference it was unanimously agreed that the improvement of arterial roads leading out of towns was a matter of urgent necessity. Unless something was done very soon, the cost of carrying out this work would become prohibitive, and for other reasons almost impracticable. A great deal of surveying had been already done, and some admirable reports had been drawn up by Sir Herbert Jekyll and Colonel Hellard for the Traffic Branch of the Board of Trade. But the Traffic Board had no funds and no executive powers for laying down any complete scheme. The consequence was that improvements were being made in a haphazard and piecemeal way. London was being encircled by a series of very excellent town-planning schemes, which when they had received the approval of the Local Government Board would no doubt be proceeded with. A large number of buildings would be erected, roads would be laid down which had no reference to any general scheme, and any new system of roads, if then practicable at all, could only be carried through at enormous expense. It was supremely important that there should be some authority with dominating power which would be able to lay down a scheme of roads out of London which would be followed for all main roads in the future. If a scheme were prepared by negotiations with the town-planning authorities, the great landowners, and the promoters of the town-planning schemes, the work could be carried through at a comparatively moderate cost. In the case of Liverpool and other towns landowners had been only too glad to assist by giving land for the purpose of these roads, which would develop their property in the neighbourhood of towns. Although he had laid special stress upon the practical necessity of these roads, he should like to say also that the Royal Institute of British Architects was not at all blind to the opportunities these roads would afford of increasing the æsthetic amenities of London, and he was permitted to say that if the Institute were allowed at any future time to give assistance and advice on that side of the question as well as the other, it would be entirely at the service of the authority appointed.

THE PRIME MINISTER: Your point is that in your opinion it is desirable there should be either the creation of a new or the recognition of some existing authority?

Sir ASTON WEBB: Yes.

THE PRIME MINISTER: By which I presume you mean some Department of the Government; not a local authority, or anything of that kind?

Sir ASTON WEBB: No, not a local authority; a dominating authority.

Mr. L. VIGERS, speaking for the Surveyors' Institution, and Mr. R. J. Thomas, on behalf of the Institution of Municipal and County Engineers, expressed similar views.

Mr. RAYMOND UNWIN, on behalf of the London Society, quoted the experience of Berlin as a useful example. There, owing to want of co-ordination, traffic became congested, and a public agitation sprang up which resulted in a new Act, under which a central town-planning authority was created last year with power to regulate all traffic matters except the State railways, and to co-ordinate the local town-planning schemes.

THE PRIME MINISTER: Who under the scheme proposed is to find the money?

Mr. RAYMOND UNWIN said he thought that one of the powers to be given to the proposed authority would be that of apportioning the costs of the work amongst the different authorities according to the benefit that would accrue; the owners, the local authorities, the Central Authority of London, the Road Board, these would all contribute. The urgent matter very often was not to construct the road immediately, but to get the road agreed upon and the route protected from being blocked by buildings. The construction could very often be deferred until the urgency of the need justified its being carried out. Heavy expenditure was not required immediately, but would be required in the future if the routes of the roads could not be laid down and protected from being blocked. The protection of the routes from being blocked could be carried out by an authority which was entitled to apportion the costs fairly, because such an authority alone could settle the matter in advance; this need not necessarily involve laying down money for construction for some considerable time.

A second deputation was then introduced to the Ministers representing 48 local authorities in the rural and suburban belt of London, as well as the Commons and Footpaths Preservation Society, the Co-partnership Tenants (Limited), the Greater London Advisory Town Planning Committee, and the Garden Cities and Town Planning Association.

Alderman W. THOMPSON, Chairman of the Greater London Advisory Town Planning Committee, speaking as the representative of a conference of most of the local authorities of Greater London, said that many of the local authorities had town-planning schemes, but they did not know who was going to make the arterial roads or whether they were going to be made, or whether their schemes would link up with them. Many of the town-planning schemes were being suspended on that account. Owing to lack of foresight in the past £18,000,000 had been paid by local authorities in the last ten years for street-widenings. They wished to avoid that expenditure in the future.

THE PRIME MINISTER'S REPLY.

Mr. ASQUITH, in reply, said: I am obliged to you for the opportunity you have given me of meeting you, with my right hon. friend and colleague, the President of the Local Government Board, and of hearing what the two deputations—both of them very representative bodies looking at the same problem from somewhat different points of view—have had to say in the way of advice to the Government for its solution. It is a very serious and in some respects, I think, a unique problem. We are dealing here with an area which is outside the jurisdiction of the London County Council, but which from the point of view of the traffic into and out of London is of ever-increasing importance and difficulty of administration. There are two points of consideration which have to be borne in mind, and, of course, it is not very easy to reconcile one with the other. On the one hand we have—and I am very glad to say it—under the very beneficent legislation for which my right hon. friend is mainly responsible, a great and wholesome activity on the part of local authorities in developing schemes of town-planning. The primary object, of course, is, and must be, to a large extent circumscribed by the special interests and amenities of their own particular district. On the other hand we have a growing need, not in the interests of particular districts, but of the whole area, and of London which lies behind. We have the growing importance of making what you have called our “arterial” roads more worthy of their object; more suited to carry the growing volume of traffic, better in point of direction and of convenience, and more adapted to serve all the different localities whose traffic from time to time passes along them. These are very important and very desirable objects. As I have said, the difficulty is to reconcile them with one another. I quite feel the force of what has been said, both by the gentlemen who represent the architects and surveyors, who look at the matter from the æsthetic and technical side, and those who represent the local authorities. I quite agree that if this work of town planning is not to be arrested, or, what is equally important, if the money which is spent upon it is not afterwards to prove to be in some respects squandered and wasted, it is quite essential that we should have at the outset, before any of these schemes are carried out, these two things—foresight and co-ordination. In other words, the authorities with local enterprise who act primarily with the object of benefiting their constituents in embarking upon a town-planning scheme ought to know at the outset what is going to be the line and cost of these arterial roads which are to pass through their district, because unless these points are determined beforehand the best-laid town-planning scheme may perhaps be wrecked. That is perhaps too strong an expression, but it may be found to have involved an enormous waste of energy and expenditure.

That is the problem which you have placed before me. So far as the Government is concerned we are most anxious to give any help in our power towards its solution. It is full of difficulties. One of the most obvious which meets the eye even of the superficial observer is that there is a certain conflict of interest, by which I mean that a local authority which is bent upon getting its town-planning scheme in its own area has not the interest which the community at large has in seeing that the arterial or main road pursues exactly its proper course. I do not suppose they would like to avoid it altogether, but they would like to be saddled with not more than the minimum share of the cost of the road which passes through their district. It is a sort of inverted altruism which would prefer to have this great public advantage carried out as far as possible at the cost of one's neighbours. I have revolved the matter in my mind, and so has my right hon. friend, and we have also the advantage of the presence of Sir George Gibb. Without saying more with regard to some of the suggestions that have been thrown out as to the constitution of some permanent supervising authority—they will receive very careful and sympathetic consideration—I would propose to you for the moment that the best thing you can do in the situation in which you all find yourselves placed—I am speaking now more particularly of those who represent local authorities—is to go into conference with my right hon. friend the President of the Local Government Board, who is quite willing to lend his services. If you are willing to take him as your chairman and mediator in regard to the matter and to go into a conference under his chairmanship, put the whole thing on the table and see if you cannot hammer out by agreement, with such guidance and advice as he, with his large experience, can give you, a plan which will meet the two points of interest to which I have referred, I do not think it ought to pass the wit of experienced gentlemen such as you are, or that the conflict and collision of local interests ought to prevent the attainment of a scheme which will on the one hand secure and carry out all these various proposals for town planning, and, on the other, give to the inhabitants of London and to the wayfarers and traffic of the whole district the best scheme of arterial roads which at present, at any rate, can be devised. I venture to make that suggestion, and if it is your wish to put yourself into communication with my right hon. friend at the Local Government Board, he will arrange without any avoidable delay that such a conference shall be held and that all the various interests—and they are many—some of which appear at first sight to be in conflict—shall be heard in mutual conference. I cannot help thinking that in that way you might tide over the immediate problem that lies before you. On the larger question as to what authority—and I confess I am very much impressed with the view

that there ought to be some authority—as to what should be the character and position and the precise functions of any authority which might ultimately seem to be the best fitted for the purpose in regard to the general survey of schemes of this kind, that is a matter which I should like to reserve for further consideration. At the same time, I thank the gentlemen who have addressed me for the assistance they have rendered by the arguments and suggestions they have put forward. For the moment I can say no more than that, and I hope my proposal will meet with your assent.

Mr. BLOMFELD, in thanking the Premier for his sympathetic response, asked if they might assume that at the proposed conference the deputation he had had the honour to introduce would be represented.—THE PRIME MINISTER: Yes.

The Extension of London: A Statesman's Advice eighty years ago.

With reference to the recent deputation to the Prime Minister to emphasise the urgent necessity for a plan for the future development of Greater London and for some co-ordinating authority, the following extract from the *Architectural Magazine* (p. 528), for the year 1836, may be of interest:—

"THE GENERAL ARCHITECTURAL IMPROVEMENT OF LONDON."—We are happy to see that this subject is attracting the attention of Parliament; Mr. Alderman Wood has obtained a select committee to consider the propriety of a large number of new thoroughfares for London. Sir Robert Peel hoped that an enlarged view would be taken of the subject, and that the House would not fall into the error it had committed with respect to railroads. Perhaps the best mode of proceeding with railroads would have been to appoint competent persons to survey the whole country, and to report upon the most eligible lines; but though it was now too late to take that course, something of the same kind might be done, with a view to the contemplated improvements of the metropolis; and before money of any kind were expended, some foresight ought to be used as to the future extension of London. If Commissioners could be found, in whom the public would have confidence, for a rational and comprehensive plan, it would be a subject of much congratulation (*Morning Chronicle*, 17 June 1836)."

Three-quarters of a century have shown the wisdom of the statesmanly advice of Sir Robert Peel. Mr. Asquith at the present day has before him, in the light of past experience, a clearer task, but there is need, great need, of an even greater vision.—W. R. DAVIDGE [A.].

The Danger to St. Paul's: Views of Sir Thomas Jackson and Mr. Somers Clarke.

Sir Thomas G. Jackson, R.A., who formed one of the party of architects who visited St. Paul's Cathedral for the purpose of examining the signs of settlement and the work now being done on the fabric, has given his opinion on the situation in a letter to Sir Francis Fox, published in *The Times* of the 30th June. Sir Thomas says:—

I gathered that Sir Christopher Wren laid his foundations on a bed of firm clay some 6 feet or 7 feet thick, below

which is a bed of good gravel of about the same thickness. Below that is a layer of sand charged with water.

On such a foundation, undisturbed, I think one might safely put almost any building. Wet sand is remarkably firm so long as it is confined.

In this case, however, deep sewers have been made close to the building much deeper than Wren's foundations, which are only 4 feet 6 inches below the Crypt floor, and one warehouse at all events has a basement also well below the foundations. Probably most if not all of the buildings round the Churchyard are similarly provided with deep basements, though I am not aware of the fact.

These sewers and basements were formed in the sand stratum, and from reports made during the formation of the sewer it appears that it was constructed with great difficulty, as the wet sand flowed in and had to be pumped out. This operation lasted six months before the alarm was given which prevented the formation of an additional sewer.

This draught of water and running sand from the subsoil has no doubt been the cause of the settlement of the eight piers of the Dome on which the heaviest weight rests.

Although the proposed tramway near the east end has fortunately been abandoned, I think it probable that a drainage is still going on below the foundations. It is recorded that the sewer was formed with great difficulty, the bricks disappearing in the great rush of water and sand into the excavation. I do not know what condition the sewer is in now, but even if it is still water-tight there would naturally be a draught round it which would do mischief by drawing sand from below the foundations of the Cathedral.

Whether anything can be done to avert the progress of this loosening of the subsoil I cannot from what I know form any opinion. To underpin the piers of the Dome is of course impracticable, for one would only get into the same bed of running sand. I do not know whether it would be possible to inject cement into the soil round about the deep sewer, to which I conceive the mischief is due.

The fissures you showed me in the piers in the Crypt, the nave, and the radiating buttresses at the springing of the Dome drum are alarming. A mere cursory inspection should be enough to convince anyone that the matter can no longer be neglected.

What is now being done by you and Mr. Macartney is to consolidate the piers by injecting cement grout into all the cracks with the Greathead machine. I was surprised to see the very inferior character of the core of the piers in the Crypt, which consists of loose rubble of small stones laid in very inferior mortar quite soft and unfit to carry weight. To consolidate this by grouting as you are doing is obviously the first thing to be done, and to judge from what I saw when a stone had been removed from a part of the wall which had been grouted the desired result seems to have been attained. The grout seems to have travelled into every fissure and to have set like a rock.

Underpinning being out of the question, my opinion is that the only hope is to bind the construction so firmly together as to make it a homogeneous fabric which, if it settles further, may go down without rupture.

This, of course, involves considerations of the unequal load on the central part of the building and the ends of the arms of the Cross, which no doubt creates a difficulty, but I trust not an insuperable one.

The capital work you are now doing meets the first obvious necessity, but I wish something could be done to avert further movement in the subsoil if on examination it should be found still active.

Sir Thomas adds in a postscript:—

The vibration from the street traffic is felt very sensibly in the library. I cannot feel certain as to the possibility of its affecting the stability of the building, but if it has any effect at all on the mortar joints, that effect must be for the worse.

Mr. Somers Clarke in a letter to *The Times* of the 1st July says:—

Since I resigned the position of architect to the Dean and Chapter in 1907, I have from time to time visited the building, and more especially in June of this year. I am convinced that there have been movements in the walls of the structure since I had it in charge. The condition of the southern end of the south transept when I took charge was very alarming. It was just at the foot of this immense and heavy wall that the sewer was made many years ago from which volumes of sand and water were pumped. I fear that unless all along the south side some means be found to carry the footings right down to the London clay, the Cathedral will always stand in the greatest jeopardy.

Sir T. G. Jackson calls attention to the dangers that lurk in the future. By the kind permission of Sir Francis Cook, I have examined the basement of his large warehouse, which lies immediately south of the south transept. Fortunately his premises, entirely rebuilt not very many years since, do not go down as low as the footings of the Cathedral, but immediately to the west lies a row of smaller buildings which might at any time be reconstructed. Space is so valuable at this point that the owners would find themselves benefited in all respects by carrying down the foundations of the new premises to the London clay. This would be far below the present footings. All lateral support would be lost.

The south-west tower shows active signs of movement. Close to this part of the Cathedral deep foundations for adjacent warehouses have been made. I have seen some of them myself, the water moving through the gravel which overlies the London clay.

Sir T. G. Jackson refers to vibration felt in the library. This apartment lies immediately behind the south-west tower and is consequently near the place where the deep foundations before referred to were excavated. Certain openings visible in the vaulted ceiling of this room are bigger than they were a few years since. I cannot remember of old to have felt the floor of this room in vibration, although I have spent many hours in the library. Now it vibrates considerably and constantly with the weight of passing vehicles.

The expert committee now engaged in examining the fabric of the Cathedral and considering methods of strengthening the foundations consists of Mr. Horace Darwin, acting on behalf of Sir John Wolfe Barry; Mr. Mervyn Macartney and Mr. W. D. Caröe, architects; and Sir Francis Fox and Mr. R. C. H. Davison, engineers.

The Crystal Palace.

It is satisfactory to record in these pages the successful result of the Lord Mayor's effort to preserve for the nation for all time the Crystal Palace and its magnificent park of over two hundred acres. Congratulations are especially due to Lord Plymouth, who has at length been relieved of the heavy responsibility he took upon himself some two years ago when finding the £230,000 required to save the Palace from the then imminent danger of falling into the hands of the speculative builder. This great sum was provided on the understanding that a Mansion House Fund would be raised to buy the property back from him for the nation. The Fund started well, but subscriptions falling off when £140,000 was reached, the Lord Mayor appealed to *The Times* to open a special fund of its

own to secure the balance. *The Times* responded with such good effect that in less than fourteen days the whole of the £90,000 required to complete the purchase was subscribed, Lord Plymouth himself sending a cheque for £5,000. *The Times* is to be heartily congratulated upon its splendid achievement. In response to a letter from the Lord Mayor addressed to the President of the Institute, the Council voted the sum of twenty-five guineas to the fund.

Scottish National Historical Monuments.

On the initiative of the Glasgow Institute of Architects the following letter from the four Scottish Architectural Societies has been addressed to Lord Beauchamp, First Commissioner of Works:—

MY LORD,—The undersigned have had their attention drawn to the arrangements now being made by the Government for the supervision and preservation of the Ancient Buildings coming under the Board about to be constituted for the care of the National Historical Monuments.

From the answer to the question asked in the House of Commons by Mr. Hogge, M.P. (Edinburgh East), on the 29th ult., it appears that it is in your power as First Commissioner of Works to constitute, should you find it desirable, an independent Board to deal with our Scottish National Historical Monuments.

As representing the members of the Architectural profession practising in Scotland, we are strongly of opinion that it is not only advisable, but necessary, in order to ensure an efficient and satisfactory return for the activities and resources of the Department, as far as Scotland is concerned, that a separate Advisory Board be constituted in the same manner as already done for the National Historical Monuments Commission.

The reasons are:—

1. An Advisory Board with its headquarters in Scotland would be more intimately in touch with the professional, scientific, and artistic bodies interested in the ancient architectural monuments of Scotland, not only as the landmarks of our national history, but as the vehicles of study for the students of architecture and the allied arts.

2. The Board could more readily be composed of those best fitted to assess the artistic or historic value of the subjects brought under their notice, for it must be borne in mind that all students of architecture in Scotland are carefully trained in the history of ancient English architecture, but to the English architect ancient Scottish architecture is, generally speaking, of minor interest.

3. Our ancient Scottish architecture has, like the Scottish people, strong national characteristics, which are being more deeply studied and appreciated as the years advance, and the subscribers are satisfied that the inclusion of our national monuments under an English Board would be taken as a slight on our national sentiment and keenly resented.

We would suggest that if such a Board as we desire be constituted, it would be advisable to have the architectural profession adequately represented.

In conclusion, we shall be glad, should you desire to discuss the matter further, to send a deputation to wait upon you, and you may rest assured of our readiness to give any assistance that might facilitate the formation of such a Board.—We are, &c.

(Signed by the Presidents and Secretaries of the Edinburgh Architectural Association, the Glasgow Institute of Architects, the Aberdeen Society of Architects, and the Dundee Institute of Architects).

The Royal Gold Medal 1913: Dinner to Mr. Blomfield.

A Complimentary Dinner to Mr. Reginald Blomfield, A.R.A., President of the Royal Institute, was given by the Council at the Café Royal on Monday, 30th June, to signalise the distinction of which he was the recipient at the General Meeting of the 23rd June [JOURNAL, 28th June 1913]. Mr. E. Guy Dawber presided, and besides the members of Council and their personal guests there were present as special guests of the Council Mrs. and Miss Blomfield, Sir William Emerson, Sir George and Lady Frampton, Mr. A. W. Soames, M.P., and Miss Soames, and Sir Aston Webb.

Mr. Dawber gave the toast of the evening, "Our Guest," and at the conclusion of his speech presented to Mr. Blomfield the following Address beautifully illuminated on vellum:—

"We the undersigned members of the Council of the Royal Institute of British Architects for the Session 1912-13 beg to offer to our President, Mr. Reginald Blomfield, A.R.A., F.S.A., M.A. Oxon, Hon. Fellow of Exeter College, our sincere and hearty congratulations upon the distinction that has been conferred upon him by the award of the Royal Gold Medal for Architecture, presented by his Majesty the King, in recognition of his executed works as an architect and of his contributions to the literature of architecture.

"We desire at the same time to express our appreciation of the admirable qualities which he has displayed in his first year of office, and of the great services which he has rendered, both to the Institute and to the architectural profession."

The Address bore the signatures of all the members of the Council for the past Session.

The guests were entertained with music and recitations, the programme consisting of songs by Miss Bessie Mark, violin solos by Miss Audrey Richardson, and humorous recitations by Mr. Walter Churcher, the whole arranged and provided by Mr. Sydney Perks.

Cricket: R.I.B.A. v. A.A.

This match was contested under excellent conditions on Wednesday, 9th July, on the ground of the Architectural Association at Elstree. Both sides put a fairly representative team in the field, under the captaincy of their respective Presidents. Rain overnight had made the wicket slow, and Mr. Reginald Blomfield winning the toss decided to field. The game opened sensationally enough, for after Mr. Hubbard had displayed considerable originality as to the number of balls in an over, Mr. Lutyens was brilliantly taken at point by Mr. Blomfield with the total at 1. Mr. Doll joined Mr. Cheston, and, after three "lives," settled down to an invaluable innings of 56, the partnership adding 79 for the second wicket. Mr. Slater played sound all-round cricket for his 45. Mr. Wilson took up the attack and met with immediate success, his leg-breaks

accounting for 4 wickets at a cost of 6½ runs each. The innings concluded with a last-wicket stand of 34, the majority coming from the bat of Mr. Curtis Green. The R.I.B.A. were thus faced with the task of making 213 to win. Mr. Newton and Mr. Hadwen opened the Institute's innings to the bowling of Mr. Doll and Mr. Benson, the first wicket falling at 24. With the addition of 20 runs, Mr. Sutton was caught at extra cover, making way for Mr. Brocklesby. When the latter was joined by Mr. Blomfield, runs came freely, and it was not until 153 was reached that Mr. Lutyens succeeded in separating them. With the score standing at 180 for 6 an Institute victory seemed more than probable. However, Mr. Lutyens bowled so effectively that the last 4 wickets fell for 15 runs, and the A.A. won an excellent game by the narrow margin of 17 runs. The following is the score:—

THE A.A.

Mr. E. J. T. Lutyens, c. Blomfield, b. Sutton.....	1
Mr. J. A. Cheston, b. Brocklesby	20
Mr. M. H. C. Doll, c. Nicholls, b. Wase	56
Mr. N. S. Robinson, b. Wilson	4
Mr. J. A. Slater, b. Wase	45
Mr. H. C. Benson, c. Brocklesby, b. Wilson	4
Mr. T. F. W. Grant, lbw., b. Wilson	10
Mr. S. M. P. Sheppard, st. White, b. Wilson	0
Mr. D. H. Archer, b. Brocklesby	33
Mr. C. Claydon, not out	12
Mr. W. Curtis Green, b. Wase	23
Extras	5

Total..... 213

BOWLING.—Wase 3 for 54, Wilson 4 for 26, Brocklesby 2 for 62, Sutton 1 for 47, Hadwen 0 for 18.

THE R.I.B.A.

Mr. W. G. Newton, c. Robinson, b. Benson.....	23
Mr. N. W. Hadwen, b. Benson	12
Mr. C. A. L. Sutton, c. Claydon, b. Benson.....	15
Mr. J. S. Brocklesby, b. Lutyens	84
Mr. F. H. Swindells, b. Lutyens	4
Mr. R. Blomfield, A.R.A., c. Robinson, b. Lutyens	22
Mr. F. J. Wase, c. Cheston, b. Doll	15
Mr. H. White, b. Lutyens	9
Mr. F. Nicholls, b. Lutyens	0
Mr. A. N. Wilson, c. and b. Lutyens.....	0
Mr. V. T. Hodgson, not out.....	4
Extras	9

Total..... 195

BOWLING.—Lutyens 6 for 44, Benson 3 for 47, Doll 1 for 74, Sheppard 0 for 9.

HOWARD D. ARCHER,
Hon. Sec. A.A. C.C.

CORRESPONDENCE.

The University of Sheffield: Department of Architecture: Tour in France.

The University, Sheffield: 6th July 1913.

SIR,—Will you kindly grant me space in your correspondence columns in which to announce an alteration in the arrangements for the above tour from Paris to Autun, Blois, Bourges, Chartres, &c. [p. 531].

The tour will start on 11th August, instead of 4th August as previously announced.

As there has been some misunderstanding on this point, I should also like it to be made known that, as in the case of all other courses at this University, this vacation course is open to ladies, and, as a matter of fact, two or three ladies have already decided to join the tour.

I shall be glad to supply further particulars of the tour to any desiring them.—Yours truly,
W. S. PURCHON [A.].

OBITUARY.

James Mitchell Whitelaw.

In the passing away of James M. Whitelaw the architectural profession will undoubtedly lose one of the strongest of its young men. So seldom is it given for one to meet such enthusiasm for the profession and such confidence in the future, that the loss will be felt not only by those with whom he came into personal contact, but by the architectural profession ten years hence. A young man of strong personality, with a self-confidence and faith equal to that which it is said "would move even mountains," he exerted great influence over his fellow students, not only in architecture, but also amongst some of the most successful in painting and sculpture, almost to the point of worship.

Such little success as he may have acquired in his short career was merely, Whitelaw believed, leading up to greater things. He was thoroughly convinced that the best was yet to be, and that far greater buildings than the Parthenon and the Gothic Cathedrals would yet be erected.

In working out any problem, his system was to gather together all the most up-to-date information he could collect on the subject. In his station design for the Soane Medallion, he went into the most exhaustive study of railway engines, railway construction, etc., so that he might embody the same expression into his conception, every portion of which was based on a multiple of the railway lines; the scale of the wheels was taken on to the ceiling, soffits of arches, and ornamentation. Everywhere symbolism, geometry, and proportion were employed in order to get the proper expression of a station. And so with his design for a Concert Hall, for which he gained the R.A. £20 prize; in the grouping of the sculpture he placed the Northern Bards to the North, and employed the arch and the round to give movement and rhythm.

He studied the architecture of all countries, including that of India, Japan, and China, not from any archaeological standpoint, but purely for its character and expression.

Before his death his hope and intention was to gain the R.A. Gold Medal, and so travel with both Scholarships. His idea was to make a tour of the world, starting across Europe, through India, Japan, and returning by America. However, as he

was wont to quote himself, "the best-laid schemes of mice and men gang aft agley."

It is especially sad when a young man is cut off, as he has not had his chance. An older man has done his work and had his say, but we never know what a young man may accomplish.

THOS. S. TAIT.

Mr. Whitelaw, who was drowned while bathing at Bournemouth on the 5th July, started his career in the office of Mr. Alexander Skirving, of Glasgow, and after winning the Alexander Thompson travelling studentship, with which he went to Italy, he entered the office of Dr. J. J. Burnet, in London. In 1909 he entered the Royal Academy Schools, and in 1910 won the R.I.B.A. Measured Drawings Medal with a remarkable set of drawings of the Wellington Memorial in St. Paul's, after which he won the £15 and then the £20 yearly prizes at the Academy Schools. In the present year he was awarded the Soane Medallion and £100 for his design for a terminal railway station. He was associated with Mr. Tait in competitive designs for the Marylebone Municipal Buildings, and also in the competition for the completion of the Regent's Quadrant organised by *The Builder*, in which they were placed third.

William Chasen Ralph, of Wigan, *Fellow*, elected 1903, died on the 10th July at the age of sixty-four. Mr. Ralph was a pupil of the late Edward Graham Paley, whose office he entered in 1864, and he remained with him until 1875, when he went as assistant to Mr. John Douglas, of Chester. He left Mr. Douglas in 1890, and in 1892 became partner in the firm of Heaton & Ralph, of Wigan. On the death of Mr. Heaton, the present firm, W. Chasen Ralph & Son, was established. Mr. E. Wyatt Ralph [*Licentiate*], the son, being taken into partnership. Mr. Ralph's firm was responsible for the design and erection of many important church and school buildings in Wigan and neighbourhood, of clubs, municipal buildings, hotels, and various mansions and smaller residential buildings. He was one of the founders of the Holmes Lodge of Freemasonry.

The late John Oldrid Scott.—Anent the obituary notice in the *JOURNAL*, p. 614, reference is made to works where Mr. Oldrid Scott was associated with his father. May I record a little note concerning his connection with Chester Cathedral? One day when he was in my office I noticed him inspecting some photographs loosely tacked over the fireplace, and one he pointed out as "an old friend." It shewed the groined arcading under the north wall of the Central Tower, designed to support the organ, the drawings having been prepared by him. His memory was suddenly directed to past years when he was in his father's office, and the quiet—almost shy—references he made to that time shewed the depth of his architectural faith even in the earliest years.—G. A. HUMPHREYS [F.].

THE EXAMINATIONS.

Preliminary.

The Preliminary Examination, qualifying for registration as Probationer R.I.B.A., was held in London and the undermentioned provincial cities on the 10th and 11th June. Of the 168 candidates admitted, 48 were exempted from sitting, and the remaining 120 were examined, with the following results:—

Centre	Number Examined	Passed	Relegated
London	62	38	24
Belfast	2	2	0
Bristol	10	9	1
Glasgow	3	2	1
Leeds	10	7	3
Liverpool	8	5	3
Manchester	19	14	5
Newcastle	6	6	0
	120	83	37

The 131 passed and exempted candidates, who have been registered as Probationers, are as follows:—

ALLAN: William; 19 Charing Cross Road, W.
 ANDREWS: Cyril Douglas; 86 Derby Road, Ponder's End, N.
 ASHBURNER: Edward Heathcott; 13 Braddyll Terrace, Ulverston, Lancs.
 BARROWCLIFF: Arnold Montague; 6 Burton Street, Loughborough.
 BATTLE: Arthur Newsum; White Hall, Potter Hanworth, near Lincoln.
 BEER: Archibald Frank; 34 Clarendon Street, Dover.
 BEGIE: Arthur Cyril; 17 Ward Street, Crackenedge, Dewsbury, Yorks.
 BLACKWELL: John Humphrey; "Westbury," Kettering.
 BLAMFIELD: Roy Charles; 72 Humber Road, Westcombe Park, Blackheath.
 BRIAN: Arthur Gerald; Holmbury, Berkhamsted, Herts.
 BROWN: Harold Christian Joughin; "Seamount," Ramsey, Isle of Man.
 BROWNE: Thomas Lindsay; 71 Fern Avenue, Jesmond, Newcastle.
 BRUNDLE: Henry Carleton Bulman; 756 Fulham Road, Fulham, S.W.
 BUSHELL: Thomas Oswald; "Leahurst," Glazebury, Manchester.
 CAIN: Robert Hunter; 15 West View, Douglas, Isle of Man.
 CALEY: Walter Herbert; Cranwell House, Rusthall, Tunbridge Wells.
 CAPON: George; 41 Drakefell Road, New Cross, S.E.
 CAVE: Thomas John Farley; c/o J. N. Johnston, 21 Princes Street, Yeovil.
 CLARK: Edwin Ivanhoe; Shillingford, Bampton, Devon.
 CLIFTON: Edward Noel; 7 East India Avenue, Leadenhall Street, E.C.
 CONCANEN: Tholen Alfred Hugh; 6a Churchmead Road, Willesden Green, N.W.
 CROOK: Waldo Neville Harris; 6 Davenant Road, Oxford.
 DARVILL: Douglas Harry; "Bournefield," Slough, Bucks.
 DAVIS: Guy Lidster; c/o Messrs. Shaylor and Ridge, Bank Chambers, Oswestry.
 DOE: Edgar Herbert; 63 Florence Road, Maidstone.
 DOW: William Eric; 8 West Albert Road, Kirkcaldy.
 DUNCAN: Wilfred Thomas Eardley; Convalescent Home, Queen's Park, Brighton.

EDMONDSON: Thomas; Brunshaw House, Burnley.
 FOSTER: William Richardson; "Tyneholme," Campbell Road, Gravesend.
 FRISKIN: William Wallace; 182 Kensington Park Road, Notting Hill, W.
 GOUGH: Roland Ivor; 163 Broad Street, Birmingham.
 GREENSILL: George Edward; Allport Road, Cannock, Staffs.
 GREGORY: Wallace James; 41 Craven Park Road, Harlesden, N.W.
 HAILE: Wilfred Lethaby; 28 Chesterfield Road, St. Andrew's Park, Bristol.
 HALL: Aubrey Frederick; 20 Britannia Street, Coventry.
 HALL: Bertram James Leslie; 57 Alexandra Road, Windsor, Berks.
 HALL: Herbert James; "Rodwell," 62 Cornerswell Road, Penarth.
 HALL: Richard Leslie Carby; Church House, Roundhay, Leeds.
 HARDY: John Rupert; School House, Merthyr Vale, Glamorgan.
 HARBROP: Stanley Borwell Noble; 6 Hartington Road, Millhouses, Sheffield.
 HARVEY: John Lyne; 2 Argaum Villas, Devonport.
 HAWKINS: Archibald; 2 Liverpool Place, High Street, Cheltenham.
 HEALEY: Gilbert John; Moneton, near Spalding.
 HELMING: Vernon Adolphus Job; 184 Altmore Avenue, East Ham, Essex.
 HODGES: Reginald George; "Dulce Domum," Mitcham.
 HOLDSWORTH: Tom; "Thornhyke," Manchester Road, Burnley, Lancs.
 HONER: Alfred John; 60 Machon Bank, Nether Edge, Sheffield.
 HOOD: John Thornton; 3 Bellefield Avenue, Dundee.
 HOPCRAFT: John Edwin; "Carisbrook," Limsfield, Surrey.
 HOWARD: James Leslie; Turf Lea Fold, Marple, near Stockport.
 HUDSON: Philip Sidney; The Royal Hospital, Chelsea, S.W.
 HURD: Guy Vanderseypen; "Hill Crest," Blackhill, Co. Durham.
 JEFFERY: Sidney Herbert; 31 Hardinge Road, Ashford, Kent.
 JOHNSTON: William Court; 40 Aglionby Street, Carlisle.
 JONES: Owen Campbell; 9 Dowgate Hill, Cannon Street, E.C.
 KEESEY: Walter Monckton; 3 Stadwin Street, Cheyne Walk, Chelsea, S.W.
 KELLY: Michael Richard; "Sunnyside," Marlboro' Park, Belfast.
 KING: George Edward; 78 Melton Road, West Bridgford, Nottingham.
 LANKFAR: Edwin Warry; 49 Forgate, Sheffield.
 LAUDER: Felix James; 94 Pixmore Way, Letchworth, Herts.
 LEWIS: Samuel Hamilton; Bath House, London Road, Twickenham, Middlesex.
 LOBBAN: Arthur Victor; Claremont, Ayr, N.B.
 LOVELL: Leslie Graham; Aberfoyle, Chesham Place, Bowdon, Cheshire.
 LYNE: Edgar, Jun.; Oakdale, 20 Christchurch Road, Streatham Hill, S.W.
 MCCALLUM: Malcolm Sinclair; Ivy Cottage, Brodick, Isle of Arran.
 MCALERY: John, Jun.; 7 Blenheim Terrace, Cromwell Road, Belfast.
 MCAULAY: John Alexander; 29 Cambridge Road, Great Crosby, Liverpool.
 MCCARTNEY: Harold Spencer; 110 Hulton Street, Moss Side, Manchester.
 MCCREA: William; 2 Rosebery Terrace, Kirkcaldy.
 MCGARRIGLE: Thomas; c/o Dewar, Mitchell Street, Leven, Fife.

METCALFE: Harry; 173 Shear Brow, Blackburn.
 MILNER: John Sowerby; The Vicarage, Helston, Cornwall.
 MOON: Cyril Edward; St. Chrysostom's Vicarage, Handsworth, Birmingham.
 MOORE: John Drummond Macpherson; Bayswater, Mackenzie Street, Lindfield.
 MORGAN: Taliesin Merfyn; "Telynfa," Aberdare, Glamorgan.
 NEELY: Richard Ross; 2 Cromwell Road, Belfast.
 NORBURN: George Bertram Edward; 16 Albert Grove, Southsea, Hants.
 PICKARD: Leslie Reginald; Cursham Street, Sutton-in-Ashfield, Notts.
 PILDITCH: Philip Harold; Bartrop's, Weybridge, Surrey.
 POTTS: Robert William; 21 Upper Gray Street, Edinburgh.
 QUICK: Norman Dennis; 51 Bryn Road, Swansea.
 REILLY: Eric; 68 Forest Road, Southport.
 RICHARDSON: Harley Birkbeck; 29 Greenbank Crescent, Darlington.
 RICHARDSON: Harry A.; Elsinore, Heaton, Bolton.
 RYDER: Arthur Frederick; 3 Elvey Street, Pinderfields, Wakefield.
 SADLER: James; 4 Craigie Terrace, Ferry Road, Dundee.
 SANDERS: Thomas Andrew; 5 Gloucester Road, Birkdale, Southport, Lancs.
 SARGENT: Reginald Sydney; 98 Victoria Avenue, Ore, Hastings.
 SCHEIN: Henry; 92 Downs Park Road, Clapton, N.E.
 SCOTT: Noel Edmund; c/o Edwin Bradbury, Esq., College Park Chambers, Nassau Street, Dublin.
 SHIBER: George Saba; 28 Prince's Square, Queen's Road, W.
 SMITH: Vivian Cuthbert Edwin; "Waratah," Victoria Road North, Southsea.
 SOISSONS: Louis Emmanuel Jean Guy de Savoie Carignan de; 25 Cheyne Row, Chelsea, and 12 rue de Seine, Paris.
 SPENCE: William Needham; "Lithgow," Oakley Road, Ranelagh, Co. Dublin.
 STANSFIELD: John Arthur; 22 Swinless Street, Burnley.
 STEWART: Adam Knowles; Baymount, Ward Avenue, Badger, Co. Down.
 STOTT: Christopher; 23 Queen's Avenue, Old Trafford, Manchester.
 STREADWICK: Vernon James; 47 Trent Road, Brixton Hill, S.W.
 STREETER: Frederick Robert; "Redholme," Tyrone Road, Thorpe Bay, Essex.
 SUTCLIFFE: Thomas Wilfrid; 22 Edmund Street, Rochdale.
 SYKES: Alfred Howard; 90 Birkby Hall Road, Huddersfield.
 SYKES: Douglas Harry; 86 Wilton Road, Sparkhill, Birmingham.
 SYKES: Mark Neville; 69 Cardigan Road, Leeds.
 TASKER: Edward Clough; 46 Ramshill Road, Scarborough.
 THOMAS: Dan Wynne; 49 Cowbridge Road, Carton, Cardiff.
 TIFFIN: Samuel William; 54 Huddleston Road, Tufnell Park, N.
 TROLLET: Walter George Francis; "Casetta," 114 Conway Road, Southgate, N.
 TURNBULL: Bernard William; 8 Camden Road, N.W.
 TURNER: Frederick Wentworth; 26 Wendover Road, Aylesbury, Bucks.
 VAREY: Frederick; West Hill House, Chapel Allerton, Leeds.
 VASSILIKOS: George P.; 83 Warwick Street, Westminster, S.W.
 WALKER: Eric Norman Livesay; c/o J. Livesay, Esq., 4 Whitehall Court, S.W.

WALKER: Irwin; 10 Myddleton Street, Carlisle.
 WHARF: Henry Francis; 106 Coltman Street, Hesse Road, Hull.
 WHITBURN: Algernon Stuart; "Elm Croft," Claremont Avenue, Woking.
 WHITE: Cyril Warren; Ivor House, Durdham Park, Bristol.
 WHITE: Raymond Charles; 6 Bierton Hill, Aylesbury, Bucks.
 WIGGLESWORTH: Wilfred Pierce; Dirleton, Battlefield Road, St. Alban's, Herts.
 WILLEY: Frank Cyril; "Osmington House," Elderfield Road, Clapton, N.E.
 WILLIAMS: Rees John; Rum Punccheon Hotel, Swansea.
 WILSON: Joseph; 6 Jedburgh Gardens, N. Kelvinside, Glasgow.
 WILTSHIRE: Douglas Cecil; "Hazlemere," Curzon Road, Bournemouth, E.
 WINKS: Ernest Wall; 121 Newgate Street, Worksop.
 WINNER: Basil Charles; Oak Lea, 27 Gloucester Road, Kingston-upon-Thames.
 WOOD: Arthur George; Warrington Place, Paddock Wood, Kent.
 WOOD: Henry; "The Chestnuts," 77 Lordship Road, Stoke Newington, N.
 WOOD: James; c/o Brown, 52 Elm Row, Edinburgh.
 WOOD: Ralph; Abbey Hulton, Milton, Stoke-on-Trent.
 WOOD: William Walter; 145 Front Street, Arnold, Notts.
 WOODLEY: Stanley William; "Woodview," 121 Erskine Hill, Hendon, N.W.
 YOUNG: George; 13 Beaumont Terrace, Jarrow-on-Tyne.

Intermediate.

The Intermediate Examination, qualifying for registration as Student R.I.B.A., was held in London and the provincial cities mentioned below from the 10th to the 17th June. Ninety-nine candidates were examined, with the following results:—

Centre	Number Examined	Passed	Relegated
London	46	26	20
Belfast	2	2	0
Bristol	9	6	3
Glasgow	4	2	2
Leeds	11	11	0
Liverpool	7	5	2
Manchester	15	7	8
Newcastle	5	2	3
	99	61	38

The passed candidates are as follows, the names being given in order of merit:—

[P. = Probationer.]

STEPHENS: Herbert Stanley [P. 1912]; Hampden Club, St. Pancras, N.W.
 LAWREN: John Scott [P. 1912]; 1 Castle Blair Park, Dunfermline, Fife.
 SHATTOCK: Lawrence Henry [P. 1912]; 4 Crescent Road, Wimbledon, Surrey.
 FYFE: James Simpson [P. 1912]; 147 Hunter House Road, Ecclesall, Sheffield.
 DOUGILL: Wesley [P. 1912]; 42 Victor Road, Manningham, Bradford, Yorks.
 TAYLOR: Martin Bailley [P. 1911]; 37 Wheelwright Road, Erdington, Birmingham.
 FORD: Lawton Stephen [P. 1912]; "Heatherland," Fairmile, Cobham, Surrey.
 SAUNDERS: Bernard Robertson [P. 1910]; 13 Vernon Road, Edgbaston, Birmingham.

- BLACKFORD: Joseph [P. 1911]; Oakfield, Chaddesley, near Kidderminster.
- PRATT: Neville Herbert [P. 1910]; Turret House, Meadow Lane, Nottingham.
- HOWELL: John Allnutt [P. 1905]; 3, Southmoor Road, Oxford.
- HALL: Robert Brearly [P. 1906]; Y.M.C.A. Hostel, Cardiff.
- DICKINSON: John [P. 1910]; Westholme, Bolton-on-Deane, near Rotherham.
- CROSSLEY: George [P. 1911]; 117 Upper Woodlands Road, Bradford.
- FRATER: Robert [P. 1911]; 274 Ormeau Road, Belfast.
- WHITBREAD: Leslie George [P. 1910]; c/o Sydney Moss, Esq., 4 St. Ann's Square, Manchester.
- HILL: George Noel; 4 Buckingham Road, Wallasey, Cheshire.
- BOWES: Roy [P. 1911]; 293 Oldham Road, Failsworth.
- FOOTE: Alexander Allen [P. 1910]; 3 Parliament Square, Edinburgh.
- CAWKWELL: Robert [P. 1909]; 1 Standon Road, Winco-bank, Sheffield.
- CALLENDER: George Wilfred [P. 1912]; c/o Bank of New Zealand, 1 Queen Victoria Street, S.W.
- ROSE: George Alfred [P. 1911]; 17 Stanton Road, Wimbledon, S.W.
- SPENCE: Andrew Tebbutt [P. 1912]; 65 Union Road, Clapham, S.W.
- VENN: George Oswald [P. 1911]; Featherfield, Latchford, Warrington.
- PALMER: Thomas Roger Liddesdale [P. 1910]; The Vicar-age, Roundhay, Leeds.
- GRELLIER: Cecil [P. 1909]; St. Martin's Croft, Epsom.
- BARLEY: Francis Alfred [P. 1911]; 10 Canewdon Road, Westcliff-on-Sea, Essex.
- KIRBY: Rufus [P. 1910]; "Dunnottar," 88 Turney Road, Dulwich, S.E.
- BOWES: Trevor Straker [P. 1910]; 72 Claude Road, Cardiff.
- JOHNSON: Reginald Sidney [P. 1909]; Stafford Lodge, Stafford Road, Croydon.
- BROWN: Walter James [P. 1910]; 5 Marlborough Terrace, Park Street, Taunton, Somerset.
- CORNISH: Charles Edwin [P. 1910]; Yeo Vale Cottage, Pilton Bridge, Barnstaple.
- GEORGE: Thomas [P. 1912]; 1 Okus Road, Swindon, Wilts.
- LAVENDER: Ernest Clifford [P. 1908]; "Highenden," Belvidere Road, Walsall.
- AINSWORTH: Arthur [P. 1910]; 365 Oldham Road, Newton Heath, Manchester.
- ASLIN: Charles Herbert [P. 1911]; 73 Lennox Road, Hillsboro', Sheffield.
- BOOKER: George Arthur [P. 1909]; 26, Lennox Road, Hillsboro', Sheffield.
- CHADWICK: Charles Bernard [P. 1908]; Myrtle Bank, West Park Street, Dewsbury.
- CHISHOLM: Harry Bertram [P. 1907]; 15 Old Quebec Street, Marble Arch, W.
- CLAYTON: Charles Lawrence [P. 1909]; 10 Prince Albert Street, Brighton, Sussex.
- COSSEY: George Alfred [P. 1908]; 90 Laburnum Grove, Portsmouth.
- DYSON: Ernest Vincent [P. 1912]; 4 Chapel Lane, Head-ingley, Leeds.
- FARADAY: Sidney, 17 Caithness Drive, Liscard, Cheshire.
- FAUSSET: Stuart Simon [P. 1909]; 16 Chichester Avenue, Antrim Road, Belfast.
- FILKINS: Edwin William [P. 1902]; The Bungalow, Clapham, Gravesend, Kent.
- HAMILTON: Thomas Crissey [P. 1908]; 10 Leslie Crescent, Gosforth, Newcastle-upon-Tyne.
- HASELDINE: Cyril Francis William [P. 1910]; 8 St. Peter's Church Walk, Nottingham.
- HOLROYD: Frank [P. 1909]; 2 Oakwood Avenue, Round-hay, Leeds.
- JACKSON: Ralph [P. 1906]; 38 Cheriton Square, Balham, S.W.
- LISTER: Harold Alfred [P. 1911]; 8 Wyle Cop, Shrews-bury.
- MARTIN: William Herbert [P. 1907]; 34 Waldegrave Road, Crystal Palace, S.E.
- MEDLEY: Clifford [P. 1905]; Lea Mount, Keighley, Yorks.
- MOSCROP: William Noel Jobson [P. 1909]; Ashcroft, Darlington.
- PALMER: Arthur James [P. 1911]; 1 Hurle Crescent, Clifton, Bristol.
- PENDEREL-BRODHURST: Bernard Richard [P. 1910]; Churchdale House, Harvard Road, Gunnersbury, W.
- PENNINGTON: William Fulton [P. 1910]; "Stonedene," Kendal.
- RICHARDSON: Herbert Clifford [P. 1910]; 92 Cannon Hill Road, Birmingham.
- SOWERBY: Frank Douglas [P. 1905]; 43 Upper Park Road, Belsize Park, N.
- SUTCLIFFE: Frederick [P. 1908]; Gleneffer, 25 Kenil-worth Road, Rathgar, Co. Dublin.
- TOMLINSON: Lawrence [P. 1909]; 10 Mount Preston, Leeds.
- WALKER: Harold Frederick [P. 1909]; 13 New Street, Dorset Square, N.W.

The number of failures in each subject of the Intermediate Examination was as follows:—

A. Principal Styles and General History of Architecture	22
B. 1. Simple Applied Construction	29
B. 2. Theoretical Construction	23
C. 1. Historical Architecture:—	
(a) Greek and Roman	4
(b) Byzantine and Romanesque	0
(c) French and English Gothic	3
(d) Italian, French, and English Renaissance	3
C. 2. Mathematics and Mechanics	0
C. 3. Design	18

Exemptions from the Intermediate.

The following Probationers possessing the certificates required under the regulations were exempted from the Intermediate Examination and have been registered as Students, viz.:—

- ALLAN: William [P. 1913]; 19 Charing Cross Road, W. [First-class Certificate, Liverpool University.]
- BARROWCLIFF: Arnold Montague, B.A. Lond. [P. 1913]; 6 Burton Street, Loughborough [First-class Certificate, University College, London.]
- FRISKIN: William Wallace [P. 1913]; 182 Kensington Park Road, Notting Hill, W. [Senior Certificate, Glasgow School of Architecture.]
- HITCH: John Oliver Brook [P. 1911]; 60 Harleyford Road, Vauxhall, S.W. [Four Years' Course, Archi-tectural Association.]
- MCCULLUM: Malcolm Sinclair [P. 1913]; Ivy Cottage, Brodick, Isle of Arran. [Senior Certificate, Glasgow School of Architecture.]
- MAXWELL: Arthur Edwin [P. 1907]; 3 Margaretta Terrace, Oakley Street, Chelsea, S.W. [Four years' Course, Architectural Association.]
- PATERSON: William [P. 1908]; 3 Hope Park Terrace, Edinburgh. [Diploma, Edinburgh and Heriot Watt Colleges of Art.]
- SOISSONS: Louis Emmanuel Jean Guy de Savoie Carignan de; Titte Prizeman 1912 [P. 1913]; 25 Cheyne Row, Chelsea, and 12 rue de Seine, Paris. [École des Beaux-Arts, Paris.]

WHITE: Theodore Francis Hansford [P. 1908]; 14a Cavendish Place, Cavendish Square, W. [Four Years' Course, Architectural Association.]
 WOOD: James [P. 1913]; c/o. Brown, 52 Elm Row, Edinburgh. [Diploma, Edinburgh College of Art.]

The Final and Special.

The Final and Special Examinations, qualifying for candidature as Associate R.I.B.A., were held in London from the 19th to the 27th June. Of the 96 candidates examined, 33 passed, and 63 were relegated to their studies. The passed candidates are as follows:—

[S. = Student.]

ADAMS: Edward [S. 1910]; Carfax Chambers, Oxford.
 BUDDEN: Lionel Bailey [Special]; "Strathyre," Heswall, Cheshire.
 CROWE: Joseph John [Special]; 35 Harlow Moor Drive, Harrogate.
 ELLIS: Thomas Gordon [S. 1910]; 8 St. Stephen's Crescent, Bayswater, W.
 FRASER: Henry Hubert [S. 1907]; 7 Upper Montague Street, W.
 GODFREY: Henry Victor [S. 1908]; 26 Ingersoll Road, Shepherd's Bush, W.
 GRIFFIN: Douglas Horley [S. 1911]; 7 Esplanade, Waterloo, Liverpool.
 GRISSELL: Francis [S. 1907]; 7 Adam Street, Adelphi.
 HAMMOND: Frederick Millett [Special]; 108 Arncliffe Terrace, Begram's Lane, Bradford.
 HANDS: Joseph Garnet [S. 1911]; 12a Johnson Mansions, Queen's Club Gardens, West Kensington, W.
 HEBBLETHWAITE: Bernard Robinson [S. 1910]; 29 Hayne Road, Beckenham.
 HENDRY: Harry Duncan [S. 1909]; 102 Strathyre Avenue, Norbury, S.W.
 HILL: Joseph [S. 1909]; 23 Parliament Hill, Hampstead, N.W.
 KAY: George Alexander [S. 1907]; 16 Cavendish Road, Southsea, Hants.
 LAWSON: John Boyd [S. 1910]; 98 Esmond Road, Bedford Park, W.
 LINTON: Leonard [S. 1908]; 93 High Street, Stockton-on-Tees.
 LORNE: Francis [S. 1911]; "Dunollie House," Monkham's Drive, Woodford Green.
 MACKENZIE: Gilbert Marshall [S. 1912]; 1 Victoria Street, S.W.
 MARCH: John Ewart [S. 1911]; Saleham, Clarence Road, Clapham Park, S.W.
 MAYHEW: Alfred Ernest [S. 1910]; 20 Gladsmuir Road, Whitehall Park, Highgate, N.
 NIMMO: William Wilson [S. 1908]; 23 Parliament Hill, Hampstead, N.W.
 PEERLESS: Herbert Read [S. 1910]; 37 Redington Road, Hampstead, N.W.
 PHILLIPS: Aubrey Wyndham [S. 1912]; 67 Gwydr Crescent, Swansea.
 PONDER: Claud Vincent [S. 1905]; 42 Craven Street, Strand, W.C.
 ROGERS: John Charles [S. 1912]; 1 Cumberland Terrace, Lloyd Square, W.C.
 RUSHWORTH: Tom Sadler [S. 1905]; "The Farmhouse," Sheering, Harlow, Essex.
 SPENCER: Thomas [S. 1907]; "Hawkhurst," 25 Fitzgerald Avenue, East Sheen, S.W.
 STURGEON: Robert Victor [S. 1909]; 21 Range Road, Whalley Range, Manchester.
 TAIT: Thomas Smith [Special]; 26 Holyoake Walk, Ealing.
 VOELKEL: William [S. 1909]; 29 Hazelwood Avenue, Newcastle-upon-Tyne.
 WALKER: Richard [S. 1910]; 10 Campden House Road, Campden Hill, W.

WILKS: John [S. 1909]; 47 Mowbray Road, South Shields.
 WOOD: Herbert McGregor [S. 1908]; 5 Hornsey Lane Gardens, Highgate, N.

The number of failures in each subject of the Final Examination was as follows:—

A. Design	58
B. Construction—	
(1) Foundations, Walls, &c.	35
(2) Iron and Steel	30
C. Hygiene	34
D. Properties and Uses of Building Materials	12
E. The Ordinary Practice of Architecture	27
F. Thesis	22

Colonial Examination.

At the Intermediate Examination held in Sydney last March the following candidate passed and has been registered as Student, viz.:—

MOORE: John Drummond Macpherson [P. 1912]; "Bayswater," Mackenzie Street, Lindfield, N.S.W.

The Final: Testimonies of Study approved.

The Board of Architectural Education announce that the designs submitted by the under-mentioned students who are qualifying for the Final Examination have been approved:—

Subject VIII.—DESIGN FOR A CARRIAGE ENTRANCE.

P. D. Bennett.

Subject IX.—(a) DESIGN FOR A MONUMENT CONTAINING ONE OR MORE FOUNTAINS.

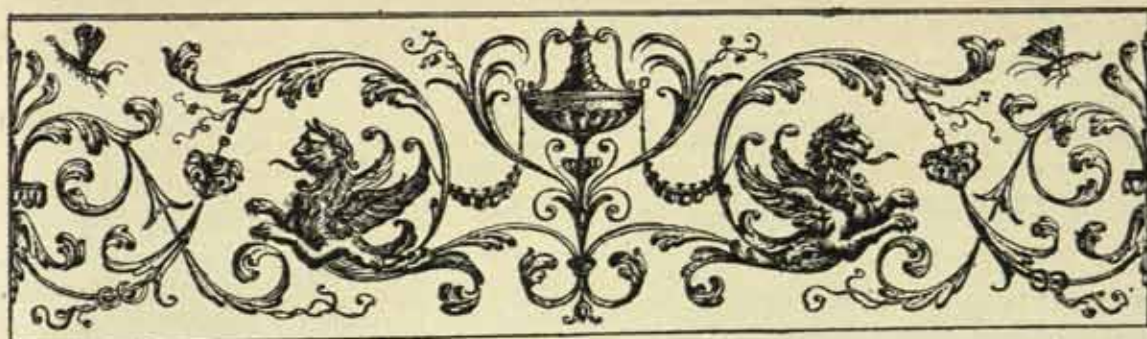
R. Braine.	R. S. Wallace.
W. W. Locke.	J. S. Hodges.
A. S. Burnett.	J. E. Lutyens.
F. Williamson.	B. A. Miller.
A. F. Kaltenbach.	E. C. Davies.
G. E. Charlewood.	R. H. Philp.
H. J. Tebbutt.	A. F. Hooper.
H. Dicksee.	J. Macgregor.
F. A. Addey.	J. C. Fowell.
F. Jenkins.	F. O. Lawrence.
R. S. Dixon.	G. Davidson.

(b) DESIGN FOR A BANK.

H. L. Charles.	J. J. Nathaniels.
W. T. S. Foster.	C. H. Wright.
W. R. Davison.	H. T. Cooksey.
E. Fincham.	C. H. Woodhouse.
J. E. Marchinton.	C. Ripley.
H. E. Crossland.	J. O. Thompson.
E. R. Frankland-Bell.	T. T. Jenkins.
I. Omar.	B. Newbould.
J. O. Cheadle.	E. R. F. Cole.
E. A. L. Martyn.	A. Thorpe.
H. F. Chandler.	O. Newbold.
R. Lone.	C. H. James.
S. G. Soper.	A. Silcock.
G. P. Stainsby.	V. Dyson.
H. Bagenal.	L. Foster.
W. G. Knight.	R. A. Barber.
J. W. Bull.	A. J. Sparrow.
G. Bennett.	H. Andrew.
A. Nisbet.	J. K. Currie.

Alternative Problems in Design (JOURNAL, 28th June, p. 615).

Errata.—Subject XI. (b): for Country Club read County Club.—Subject XII. (b): A Golf Club House: 2nd line of particulars, for Clubrooms read Club room.



RECENT DEVELOPMENTS AFFECTING SCHOOL BUILDING.

By PERCY MORRIS [A.], Cates Prizeman 1897, Architect to the Devon County Education Committee.

Read before the Liverpool Architectural Society, 17th February 1913.

MY purpose in addressing you this evening is to bring before you some recent developments affecting school building, and to discuss the causes which have produced them; but whilst dealing with those factors which are already operative it is necessary to mention others which may become so in the near future. My remarks will be confined chiefly to Elementary Schools, since it is in this respect that changes are at present most noticeable, but they involve principles which are equally applicable to every type of school building.

We are passing through a period of general unrest far-reaching in its influence, and architects come into contact with it at many points. In the direction of school planning it is especially active; and we are told by our critics that in this regard doctors and architects disagree, not only with the Board of Education, but also among themselves. To some extent this is true, so that amid the tangled web of conflicting ideas it may not be unprofitable if we review the trend of events, in the hope that such a survey may have a steadying effect, and, in restoring balance, may adjust also our sense of proportion.

If you glance at the history of school planning since the end of the eighteenth century, you will find, speaking very roughly, that the close of each quarter of a century has been punctuated, as it were, by the introduction of a new type of plan, differing essentially from its predecessor and destined to supersede it. First we have the *Lancasterian school* [fig. 1], a large room with its raised platform at one end for the master, desks generally in the centre of the room facing the platform, and space at the sides for children to stand the platform, and space at the sides for children to stand in groups during instruction. One master was in charge of perhaps 1,000 children, and his duty during school hours was largely that of superintendence rather than teaching—the theory underlying the system being one of self-instruction by the children themselves, a number of whom were trained as monitors for the purpose.

This type was succeeded about 1826 by schools planned upon the *Stow system* [fig. 2], consequent upon a reaction against the employment of monitors, and a movement in favour of staffing with qualified teachers. The school was characterised by the provision of a large gallery at one end of the room, whilst the desks were arranged at the sides, and the central

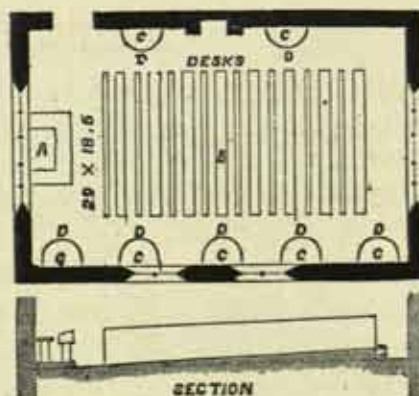


FIG. 1.—LANCASTERIAN SCHOOL.



FIG. 2.—SCHOOL ON STOW'S SYSTEM.

space was left unencumbered by furniture. An essential adjunct was a large playground, or "uncovered school-room" as it was called, for games and physical exercises under supervision of the teachers.

The advent of the *Pupil Teacher system* in 1846, and its general adoption about 1850, was responsible for the next change [fig. 3]. The rooms became narrow, and had desks on one side only; the latter were arranged in groups divided by curtains, but in such a way as to allow supervision by the head teacher.

The year 1870 marked a period of great activity in educational matters. The passing of the Elementary Education Act and the creation of School Boards, among them the "School Board for London," necessitated the erection of new buildings throughout the country.

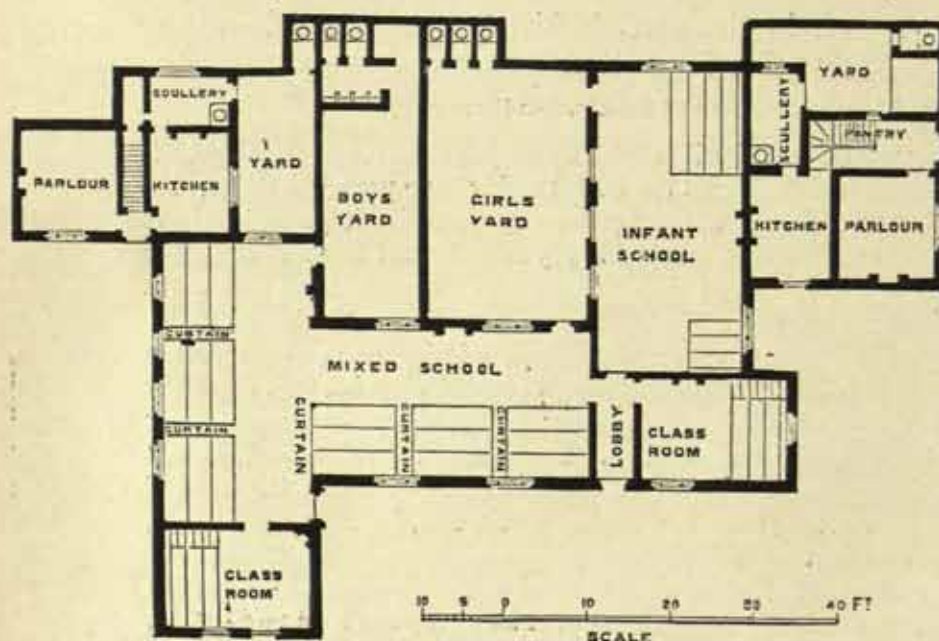


FIG. 3.—INFANTS' AND "MIXED" SCHOOL FOR 250, AS SUGGESTED BY EDUCATION DEPARTMENT.

of successors known as "the central hall type," was the result. It took the form of a 3-story building, the boys' and girls' departments each consisting of a series of eight classrooms grouped around, and entered from, an assembly hall, whilst the practice of lighting from the left side adopted on the Continent was introduced in most of the rooms. Such a departure from



FIG. 4.—BEN JONSON SCHOOL, STEPNEY (ERECTED 1872).

previously accepted principles did not escape severe criticism, and its adoption was gradual, until finally it became, and remained until quite recently, the model upon which most of the larger buildings were planned. It is this type of school upon which attention is now focussed, and which is responsible for the present upheaval.

The need of brevity has compelled me to sketch in the merest outline the progress of events during the nineteenth century, but I do not wish to create the

impression that absolute rigidity of type was adhered to ; on the contrary, we find small classrooms attached to some of the earliest schools, although belief in " the sympathy of numbers " favoured large rooms. Similarly, after the acceptance of the central hall type, many schools, as you are aware, particularly the smaller ones, developed upon previous lines with an increasing number of classrooms, and sometimes with corridors giving independent access to the rooms.

At the start and for some time subsequently, the chief, one might almost say the determining, factor in school planning was undoubtedly educational requirement. The " Building Rules " even in 1871 do not mention the word ventilation, the sole provision in this respect being a requirement that a large part of each window should be made to open. It would be unfair to assume, however, that hygienic principles were not recognised, for Mr. Robson wrote in 1874 : * " To the school architect hygiene means the rules which should regulate the situation, construction, ventilation, warming, lighting, and furnishing of the building." Later the effect of hygienic influence became more marked, but in the light of recent events it was not predominant.

Since the opening of the twentieth century events have marched rapidly, and the constant flow of legislation has been somewhat bewildering. The year 1902 saw the passing of a new Education Act, the extinction of School Boards, and the establishment of new Authorities. In 1907 Medical Inspection was embodied in the Administrative Provisions Act and marked the recognition by Government of a new factor in the case : the result of external pressure renewed with increasing energy. In 1911 the Administrative Provisions Act gave effect to the recommendations of the Departmental Committee on the Cost of School Buildings in regard to the exemption of new buildings from the operation of local building by-laws and similar provisions in local Acts, the adoption of novel materials or methods in school building, and the conditions of granting loans.† Further legislation will no doubt follow as the outcome of the labours of the Departmental Committee on School Playgrounds, which has recently reported.‡

As in 1870 so in 1902 the time was ripe for a comprehensive review of affairs which led inevitably to a readjustment of ideas upon many points. Following closely came the appointment of School Medical Officers fully equipped for an immediate operation upon the central hall on the grounds that it interfered with proper cross-ventilation. One of their number had for some time previously been engaged upon the dissection of the Board's " Building Rules," and had articulated the skeleton in a manner regarded at Whitehall as grossly irreverent. But, to be serious, it is undoubtedly from this infusion of new blood that initiative in the direction of better-equipped and more healthy schools has sprung, and it would be ungracious if architects were not to acknowledge the immense service which has been rendered to them.

If in the nineteenth century educational requirement exercised undue influence, or, if you prefer it, Hygeia had not sufficiently asserted her rights, their close collaboration is now recognised as indispensable. We see that the mistake in the past lay in the adherence of the powers above to a particular type of plan ; in defence it may be urged that the same procedure had been followed in other countries, and that in the earlier days, when knowledge of the requirements was confined to a few specialists, some guiding idea was necessary. Yet there can be no doubt as to the mischievous tendency of such a policy. In the case of the central hall, approval came alike from School Boards, teachers, and architects ; one might say that doctors gave tacit approval, because there were medical officers of health in those days concerned with the proper sanitary condition of schools. I can recall several instances in which District Councils have, on the reports of their medical officers, made requirements as to ventilation ; and if the defect in

* *School Architecture*, E. R. Robson.

† *Report of the Departmental Committee on the Cost of School Buildings*. (Eyre & Spottiswoode, 1911.)

‡ *Report of the Departmental Committee on the Playgrounds of Public Elementary Schools*. (Eyre & Spottiswoode, 1912.)

regard to central halls was so obvious as we are now asked to believe, why was there no warning chorus? On the assumption that a chorus is usually preceded by a solo, may we not conclude that no soloist had at that time given the lead?

It was at the second International Congress of School Hygiene in 1907 that the newer tendencies were brought prominently forward, and I well remember the mixed reception accorded to the plan * which Dr. Reid, County Medical Officer of Staffordshire, produced and explained to the Congress, and the pungent criticism with which he assailed the Board's "Building Rules." Many of the principles he then laid down, and to which he was largely instrumental in obtaining the unwilling assent of the Board, have now been accepted as sound ones, and medical officers have since that date borne an increasing share in shaping a new course. After all, this is surely as it should be. Educationists may be agreed as to what is desirable from their point of view, and, following instructions, architects can plan buildings to meet those requirements, which, when compared with what has preceded them, show marked improvement, but progress upon these lines is apt to move in somewhat narrow compass and to be too much controlled by precedent. It needs strong external pressure, unfettered by preconceived ideas, to arrest such a tendency, and this has been exerted to the utmost in the matter before us. The standpoint from which we regarded the subject has been shifted, and the view broadened in consequence.

Personally I welcome the innovation, because neither educationists nor architects are qualified to apply a crucial test, and if it can be proved by medical inspection that certain physical defects in children are fostered by the older conditions, and can be eradicated or are non-existent under the new, surely we must admit that there is *prima facie* evidence in favour of reform. Now in this respect it appears to me that the legitimate function of an architect is to give effect to principles rather than to define them, and that the procedure should be somewhat on the following lines, acting in three directions, but interdependent: first, that the educationist and medical officer, acting in conjunction, should define general principles to be observed in planning school buildings suitable alike to the needs of education and health; secondly, that the Education Authority should state their requirements, giving instructions as to accommodation and kindred matters; thirdly, that the architect should find a practical solution of the problem by applying the general principles to the needs of the particular case. We find a parallel in the triangle of forces: if three forces, represented in magnitude and direction by the sides of a triangle taken in order, act upon a point, they will be in equilibrium. If this be the position, provided reasonable latitude of discretion is allowed, there should be the fullest scope for all concerned without danger of overlapping.

One of the healthiest signs of the new order of things, and one which is of happy augury for the future, is growing recognition of the fact that, within an area defined broadly by the same guiding lines, it is often possible to find more than one satisfactory solution of a problem. This ought to lead, I think, to an attempt to differentiate between the needs of a school building placed in the heart of an agricultural district and one situated in a crowded centre of industry. I am not suggesting an alteration of principle, but merely another line of application.

I have referred to an area which permits free movement, there is danger in circumscribing it. As an illustration of my point: the Board's "Building Rules," so far as they apply to units, are with some exceptions reasonably in accord with recent developments; but in their recommendation as to the disposition of the units we find them out of touch with present needs, and it is an interesting fact that a plan conforming in all respects with the "Rules" as they stand would not find favour at Whitehall. This statement, if unqualified, would be unjust, because the recommendations of the Departmental Committee on the Cost of School Buildings have been accepted

* See *Public Health*, November 1907.

and will modify the rules in many respects both as to planning and construction, and, as I have mentioned, further modification will doubtless follow in respect of playgrounds.

If I may say so, the Board have, I think, most wisely refrained from issuing new "Rules" at such a time. During a period of transition, some have referred to it as revolution, it is not the time to adopt as decisive, principles which may be modified in the light of further experience. The statistics of medical inspection are not yet available over a sufficiently long period; such as we have, are inconclusive, and in some cases baffling, but we look with confidence to a time when, as the outcome of co-ordination, a comparison of the results of research in definite directions will not only be possible, but of the greatest service. For example, an independent investigation of the influence of lighting of schoolrooms upon eyesight, made in Surrey by two of the County Medical Inspectors, is noted in the Annual Report of the School Medical Officer of that county.* In both cases the result is paradoxical, the percentage of defective eyesight being most marked in well-lighted schools. The following table gives the figures of one of the Inspectors:—

Age 7-8.		Age 13-14.	
Well-lighted schools,	8.5 per cent. (235).	15.2 per cent.	(760).
All others	8.0 „ (549).	13.4 „	(737).

I should hesitate to mention this, because it is not put forward in the Report as in any way conclusive, and it is just the kind of evidence which is seized upon and exploited for an unworthy purpose; but I do so because I want to drive home the point that there are so many undetermined influences at work, possibly external, which may affect results that, unless we tread very warily at the present time, we may find ourselves groping in a blind alley. Further than this, the change has been marked by controversy into which unnecessary heat and mutual recrimination have been introduced. Would it not be better to sink our differences and make good those points, and there are many, upon which we are agreed? It is only by so doing that we can hope to carry public opinion with us. What we want at the present time is not the multiplication of experts, each with his own nostrum, but students keenly alive to every new move who can view the situation with a certain amount of detachment, and exercise discrimination in the adoption of new ideas. A theory pushed to extremes may become a mere fetish.

Having now cleared the ground to some extent by a general survey of the situation, I propose to examine at closer quarters the effect of the movement in specific directions, and my subject here calls for sub-division into four headings:

1. Playgrounds and Sites;
2. Ventilation and Heating;
3. Planning; and
4. The Cost of School Buildings.

This order is necessary because the first two on the list influence the third, and all three bear directly upon the fourth.

PLAYGROUNDS AND SITES.

In regard to playgrounds the Report of the Departmental Committee will be received with mixed feelings by Education Authorities. There must necessarily be cases where the enforcement of too rigid rules would impose considerable hardship, and these should no doubt be considered upon their merits, but it would obviously be unwise to base rules for general application upon exceptional conditions prevailing in particular districts.

The terms of the reference are no doubt known to you, but the subject is dealt with in the Report in too comprehensive a manner for me to cover the whole ground, and I can only touch

* Annual Report, 1911.

upon the conclusions arrived at without fully discussing the reasons upon which they are based.

The purposes of a playground are said to fall under seven headings, which may be epitomised as follows:—

- (1) To secure light and ventilation, to avoid noise, and provide sufficient space for offices.
- (2, 3, and 4) To meet the requirements of the Code in regard to recreation, physical exercises, and organised games respectively.
- (5) To give space for open-air classes.
- (6) To permit assembly of the children and give space for some of them to play before and between school hours.
- (7) To provide a place for recreation during holidays and on Saturdays.

The first five of these directly affect planning; whilst 6 and 7 need not concern us if the requirements of the former are met.

Arising out of No. 1, the Committee emphasise the effect of surrounding buildings upon light and ventilation, and very rightly recommend that drawings and particulars of these should in all cases be submitted to the Board with plans of new schools or alterations of existing ones. The annoyance of traffic they point out is best met by choice of a suitable site. The proximity of offices to the school was a subject upon which there was difference of opinion and the point was left an open one. In theory I admit there should be no difficulty in placing them closer to the school, but, speaking from experience, I am convinced that general relaxation of the rules in this respect, especially in country districts, would at present be inadvisable, although exceptions might be made. Regulations which may be perfect on paper are sometimes difficult to enforce.

With regard to Nos. 2, 3, and 4: for recreation during the interval the Committee agreed that 20 square feet for each boy or girl and 16 feet for each infant is sufficient, provided the department is fairly large and the shape of the playground suitable. There was general agreement that physical exercises should, when possible, be taken in the open air, and useful information was given as to the space required.* The following table shows this for Standard VI. boys:—

No. in Class	Free exercises only				Including marching, running, and games
	Opened out		* Allowing space for observation		
	ft. in.	ft. in.	ft. in.	ft. in.	—
20	22 0 by	12 0 = 264 sq. ft.	34 0 by	24 0 = 816 sq. ft.	
30	32 0 "	12 0 = 384 "	44 0 "	24 0 = 1,056 "	58 0 by 26 0 = 1,508 sq. ft.
40	42 0 "	12 0 = 504 "	54 0 "	24 0 = 1,296 "	66 0 " 30 0 = 1,980 "
50	52 0 "	12 0 = 624 "	64 0 "	24 0 = 1,536 "	75 0 " 33 0 = 2,475 "
60	62 0 "	12 0 = 744 "	74 0 "	24 0 = 1,776 "	80 0 " 37 0 = 2,960 "

* At each side of the class, 6 feet; at back of the class, 4 feet; in front of the class, 8 feet.

The dimensions given are important because a similar area of another shape may prove very inconvenient. The evidence was in favour of taking one class at a time, and the conclusion arrived at was that for a department of not more than seven or eight classes one space would be sufficient. A tendency to secure larger sites and reserve a part for organised games was mentioned, and the opinion was expressed in evidence that for this purpose there is little object in exceeding an acre for a department of about 600 unless two acres is acquired. Apart from provision for organised games, whether by the purchase of larger sites or the supplementary use of public recreation grounds, it was shown that many games can be played in a modified form in a play-

* H.M.I. Grenfell's evidence, *Departmental Committee's Report*, p. 143.

ground which allows 30 square feet per child, provided the department is large enough; the intention being that each class should use it in turn under supervision of the teachers, and when so used the checking of unnecessary noise should be part of the discipline.

In regard to No. 5 there is to be an increasing tendency to use the playground for open-air classes, but the practice is not regarded as a determining factor in the size of the playground.

Briefly the *Recommendations of the Committee in regard to New Schools* are:—

(1) That the shape of the playground should be suitable, and passages, forecourts, &c., be omitted in calculating the minimum area.

(2) (a) That there should be separate playgrounds for boys and girls except in very small schools.

(b) That playgrounds for girls and infants need not be separated.

(c) That where girls and infants use the same playground the area, subject to special conditions, must be sufficient for the total number of children.

(d) That areas be provided as follows:—

	If other provision is made for games		If no other provision is made for games	
	Each boy or girl	Each infant	Each boy or girl	Each infant
Each undivided playground for 200 and upwards.....	20 sq. feet	16 sq. feet	30 sq. feet	16 sq. feet
Each undivided playground for less than 200..... 2,000 sq. feet	+ 10 sq. feet	+ 6 sq. feet	+ 20 sq. feet	+ 6 sq. feet

Comparing the recommendations with present requirements (30 feet per head), the following table shows the increased or decreased area per head and its percentage:—

	If other provision is made for games		If no other provision is made for games	
	Each boy or girl	Each infant	Each boy or girl	Each infant
Each undivided playground for 200 and upwards	- 10 sq. feet (- 33·3 per cent.)	- 14 sq. feet (- 46·6 per cent.)	No alteration (")	- 14 sq. feet (- 46·6 per cent.)
Department of 50 children	+ 20 sq. feet (+ 66·6 per cent.)	+ 16 sq. feet (+ 53·5 per cent.)	+ 30 sq. feet (+ 100 per cent.)	+ 16 sq. feet (+ 53·5 per cent.)
" " 100 "	No alteration (")	- 4 sq. feet (- 13·3 per cent.)	+ 10 sq. feet (+ 33·3 per cent.)	- 4 sq. feet (- 13·3 per cent.)
" " 150 "	- 6·7 sq. feet (- 22·7 per cent.)	- 10·7 sq. feet (- 35·7 per cent.)	+ 3·3 sq. feet (+ 11 per cent.)	- 10·7 sq. feet (- 20·8 per cent.)

Exceptional Cases.—The Committee recommend that where the cost of sites is excessive each case shall be dealt with on its merits, having regard to the financial burden imposed. Thus it is pointed out that the cost per square yard may vary from 10s. to £9 10s. 6d., and in each case be regarded as excessive by the authority concerned. The produce of a 1d. rate per scholar is therefore suggested as a basis of comparison.* There is one point not dealt with in the Report but which may possibly be mentioned in the evidence:—I refer to the cost of development as apart from the original cost of the site, e.g. in Devon we pay from 3d. to 4s. 6d. a square yard for land; these are about the limits, but owing to the hilly nature of the ground the cost of excavation and retaining walls is often very heavy. It may be said that in these circumstances the purchase of more suitable land at a larger price would be economical; so it would be if there were any choice in the matter, but in many cases there is no alternative. In one instance the estimated additional cost of the school due to site was as much as £4 per head, or an equivalent of 3s. 3d. per square yard added to the original cost of the land.†

* Varies from 1s. 2d. to over 9s.; Devon = 3s. 5d.

† 5½d. per square yard.

Roof Playgrounds and Detached Playgrounds were suggested as offering possible chances of relief in special cases, and the former will no doubt be largely adopted in meeting the changes foreshadowed in respect of existing schools upon cramped sites. The merits and disadvantages of roof playgrounds are discussed, and the objection that they are often smoky and wind-swept is not regarded as serious except in special cases; but the need of additional stairs, making them prohibitive for infants, and their unsuitability for ball games are recognised as the chief drawbacks. The advantages pointed out are suitability for open-air classes, and the fact that, if the floor is made sound-resisting, they can be used in shifts. In planning such playgrounds the points to be borne in mind are said to be shape, freedom from obstructions, easy supervision and access. The Committee recommend that roof playgrounds should be accepted and be deemed, without the application of any numerical rule, to provide sufficient accommodation for the children, other than infants, occupying one floor.

The acceptance of detached playgrounds as an expedient for overcoming difficulty in special cases is not recommended unless the site is within about one minute's walk of the school.

Choice of Sites.—A recommendation made by a witness as to the desirability of school sites being near open spaces is admitted to have obvious advantages, but the Committee dismiss it as possible only in exceptional cases.

The *Use of Parks* is recommended on condition that space is available which has not to be shared with the general public, and that there are no drawbacks of a similar nature.

The subject of *Surface Coverings* is important, and one which is likely to require a good deal of attention in the near future. In regard to large playgrounds there was general, but not unanimous, opinion that tar paving was the most suitable. It is difficult to see why size should be a qualification; my experience is that the surface of a small playground of a country school is generally a very difficult problem. There is an increasing number of claims by parents for compensation for accidents sustained by children in playgrounds, and if insurance companies are to accept the risks they will make it a condition that surfaces must be kept in better order. In country districts, where no suitable material is available, this will raise serious questions, especially where gradients are steep. In Devon 1 in 8 is not uncommon in the older playgrounds. No form of paving or gravelling would be suitable on such a slope; the former would be slippery, the latter would soon be washed off and become channelled by the action of surface water. Levelling causes heavy expenditure, involving in many cases the underpinning of buildings and boundary walls and the construction of retaining walls. The need of thorough underdraining, both for tar paving and gravel, is insisted upon, and I can fully endorse the point. The Report also mentions a complaint made by teachers of surface water being drained towards the middle of playgrounds; "it is certainly better to form shallow channels near the sides, and they are not noticeable when walked over."

The question of *Enclosing Walls* as a screen from the street was the subject of divergent views, and the Committee express the opinion that it is impossible to lay down a general rule in regard to them.

Under *Equipment* it is pointed out that there is scope for more thought and ingenuity in making playgrounds attractive, and the planting of creepers, shrubs and flowers, and possibly trees for shade, is suggested. Where a master is a keen gardener much might be done in this way if the children could be trained to take an interest in their surroundings, but unless there is supervision the effect is not happy. Hedges, to dispense with walls or fences, are also mentioned, and I cannot see why it should not be possible to use them more frequently in country districts. Discipline at first ought in time to create interest in their preservation and upkeep by the children themselves; but, unfortunately, in practice if there is one device for enclosing a site which needs the protection of an unclimbable fence more than another it is a hedge, and I have had to remove

or protect many of them. In cases where they remain there are frequent complaints of trespass upon adjoining land.

Other Possibilities for town schools, such as the utilisation of blank walls for fives-courts, sandpits for infants, and the provision of gymnastic apparatus and swings, are mentioned, but the two latter are said to be unpopular with Local Education Authorities owing to the frequency of claims for compensation for accidents.

The subject of *Covered Sheds* brought out great difference of opinion, and the Committee state that it may very well be left to Education Authorities to decide whether a shed is necessary or not; but if provided, they point out that greater height appears to be necessary.

Covered Playgrounds formed by building on piers, leaving a space under the school, were condemned by most witnesses, and I think that one's experience of them fully endorses the verdict.

Recommendations as to Existing Buildings.—The foregoing notes refer to new schools, but it is the application of suggested reforms to existing schools which is likely to cause trouble, and certainly no alterations ought now to be planned without bearing the probable changes in mind. The essential points are the Committee's recommendations, which are briefly as follows:—

- (1) Every school should have space for physical exercises in the playground or an equivalent space.
- (2) After 1920 a playground allowing less than 10 square feet per child should be classed as "insufficient."
- (3) After 1925 a playground allowing less than 15 square feet per child should be classed as "insufficient."
- (4) Enlargement of buildings should not, except in unusual circumstances, be allowed if it would result in the reduction of a playground below the standard for new schools.* Reduction of the playground below these limits by the erection of buildings for special instruction should not be allowed.

With regard to space for physical exercises mentioned in the first recommendation, the size and organisation of the school would be the determining factor. "Equivalent space" is defined as suitable open space within five minutes' walk at the utmost from the school. It is not necessarily intended that the change indicated in Recommendations 2 and 3 shall become an immediate requirement by the dates mentioned, and it is pointed out that their enforcement depends upon circumstances of a very complex nature, but it is foreshadowed that the cumulative effect of several shortcomings should, as at present, decide the case.

If I have dealt at too great length with the subject of playgrounds I must plead their added importance at the present time.

VENTILATION AND HEATING.

Approach it as you may, you will find that any discussion upon school planning inevitably revolves around the problems of ventilation; and as I have pointed out, recognition of the need of healthier schools in this respect was the mainspring of the movement we are considering. On the one hand, theories as to the nature of the problems have undergone startling change; and on the other, public opinion regards with quickened interest the practical side of the question, stimulated no doubt by the campaign in favour of the open window and a knowledge of the benefits derived by patients in open-air sanatoria.

It is difficult for an architect to grasp the theoretical side of the situation in all its bearings, or to attach to these their due significance, because scientists disagree upon many points; but

* The full effect of this recommendation only becomes apparent when applied to individual cases, and it is to be

hoped that the subject will be more fully considered before the recommendation is accepted.

the outstanding fact seems to be that what has been called the "chemical quality era" is likely to pass away if it has not already done so. Our old bogey carbon dioxide re-appears in the guise of a martyr whose reputation has suffered because of long association with evil companions. Dr. Leonard Hill has stated that even 800 to 400 parts of carbon dioxide per 10,000 parts of air have no considerable effect upon the human organism.* But if we do not regard it as an active poison, no one has suggested that we can afford to ignore its presence. What we are told is that we must look upon it as a valuable indicator which may be trusted to signal danger when occasion arises.

So, too, theories as to the percentage of oxygen have changed, and it is said that a deficiency of from 15 to 21 per cent. in the quantity normally present in the air we breathe is now known to have very little effect upon a healthy subject.

In another direction, bearing also upon ventilation, the results of experiments carried out by Dr. Rideal in 1908 in regard to the relative hygienic values of gas and electricity for ordinary domestic lighting led him to conclude that neither on chemical, physical, nor medical grounds does choice of the two systems depend upon hygienic considerations. Further than this it was found that "owing to the better ventilation obtained by gas, the products of combustion are not found in the air in anything like the proportion which might be expected."†

Then as to vitiated air, it is acknowledged that the exact ingredients which constitute harmful qualities are undetermined, and we are told upon high authority that there is no evidence whatever of the existence of any poisonous organic impurity in the air of crowded rooms.‡ Apparently it is the cumulative effect of several factors which causes the mischief.

Although it is undoubtedly interesting to watch the swing of the pendulum, we are sometimes tempted to ask whether the assistance which scientists afford us in ventilation is at present of much practical use, since it is destructive rather than constructive, but we must recognise the fact that in clearing the ground for further research they may be on the eve of far-reaching developments.

Although scientists at present cannot tell us precisely what ingredients make it harmful to breathe vitiated or stagnant air, we know by the effect produced that it is harmful. We believe further that the effect of breathing over-heated air is enervating because of some change undergone in the process of heating which chemical analysis fails to reveal. On the other hand, we know that movement of the air produces a feeling of freshness and buoyancy, and we are told that even though a low temperature may cause discomfort, as is often the case in open-air treatment of pulmonary diseases, the effect is nevertheless beneficial.§|| May we not be safe, therefore, in aiming at the supply, under conditions as favourable as we can make them, of abundant quantities of fresh air in a state approximating as nearly as possible to that in which it is supplied by nature?

As matters stand there appears to be general acceptance of the fact that movement, coolness, and a proper degree of relative moisture in the air are essential to good ventilation. What degree of humidity is requisite is a debated point, but Dr. Parkes and Dr. Shaw have both expressed the opinion that too much stress can be laid upon it. They point out that at very high and very low temperatures it is of great importance, and it is necessary under these conditions

* Paper read before the Physiological Section of the British Association, 1912.

† *Journal R. San. Inst.*, March 1908. See also "The Hygienic Aspects of Gas and Electricity for Heating and Lighting," Professor V. B. Lewes, *Builder*, 15th November 1912. "The Hygienic Aspects of Gas Lighting and Heating," Dr. F. S. Toogood, *Medical Magazine*, February 1911.

‡ Dr. Haldane.

§ "The Real Nature of the Problems in Heating and Ventilation awaiting Solution by the Engineer," Arthur H. Barker, 1st Lecture at University College, 17th October 1911.

|| In this connection it is interesting to read the remarks made by Dr. Boobbyer in the discussion upon Mr. Saxon Snell's and Mr. Milburn's papers upon Hospitals, R.I.B.A. JOURNAL, 8th March 1913.

to have dry air, but at temperatures ranging from 55° to 65° they incline to the opinion that differences of humidity are not of great consequence.*

If diversity of opinion prevails amongst theorists, it is refreshing to find that in regard to school buildings there is almost unanimous agreement among school medical officers and school architects in favour of natural ventilation by means of the open window, and I make no apology, therefore, for regarding it as an accepted fact. There are, I know, conditions prevailing in some industrial centres which need special measures, just as there are school buildings which no conceivable scheme of natural ventilation would render fit for use; in these cases resort must be had to mechanical means, and a combined plenum and vacuum system is no doubt the best that can be devised for the purpose. Such a system is also essential for many public and other buildings. We know, for instance, what it has achieved in the large Examination Hall of Cambridge University,† but local conditions or the needs of unsuitable school buildings cannot be regarded as the determining factor for general application, and it rests with us to plan buildings to meet the requirements of the system we have adopted. I do not wish to decry the plenum system, nor is it necessary to recapitulate the points which are urged against it, I am merely dealing with recent developments, and these point in the direction I have indicated.

We must not lose sight of the fact that in natural ventilation the personal factor is an important one and much rests with the teacher; but any system will fail if misused. There is marked change of attitude already in these matters, and its effect will be more noticeable as time goes on. It is interesting to read, for instance, in the Annual Report of the School Medical Officer for Westmoreland‡ that in some schools a sanitary squad is told off during the "intervals" to assist the teacher in his endeavours to rid his school of stagnant air.

There are certain conditions necessary to successful natural ventilation which one should regard as axioms. I will state them briefly first of all, and discuss them afterwards:—

- (1) There must be suitable means of direct cross-window ventilation.
- (2) Windows must be kept open during school hours as fully as circumstances permit, and all windows must be thrown fully open thoroughly to flush the rooms during intervals, and before and after school hours.
- (3) The direction of the wind must be studied and action taken accordingly.
- (4) The walls, ceilings, and furniture must be kept at a suitable temperature.
- (5) Incoming air must be tempered only, not heated.

(1) I have placed cross-ventilation first on my list because it is the essence of the whole matter; we want windows on both sides of the room to create movement of the air. These may be arranged as in the Staffordshire type of school, where double-hung sashes are used on both sides of the room; the lower parts of the windows to the right of the scholars open on to a verandah, the upper parts are carried above the verandah roof. Hopper ventilators are provided on both sides of the room, delivering at a height of 6 feet above the floor line. In the Derbyshire type, where bi-lateral lighting is adopted, the principle is much the same except that fully exposed casement windows are used on both sides. A third plan is to have the main lighting windows on the left side of the children, and on the right inspection windows opening on to a corridor fully ventilated by windows; the roof of the corridor is kept low, and a range of clerestory lights, opening on centres into the open air, is placed above it. Hoppers are used in the same way as before. All of these systems have their advocates; I have found the last-mentioned work excellently in practice, and in very exceptional weather if the upper lights have to be almost closed the corridor provides a reservoir of fresh-tempered air supplied by these windows which are in suitable positions for the purpose.§

* *R. San. Inst. Journal*, April 1910. Discussion on the Rev. J. B. Lock's paper.

† Rev. J. B. Lock, *The Times*, 1st November 1912, and

R. San. Inst. Journal, April 1910.

‡ 1911.

§ See *Corridors*, p. 668.

It is necessary to emphasise the fact that for ventilation, if on no other grounds, it is not sufficient to have windows in opposite walls of a room unless the sills are low enough. I have dealt with numbers of rooms where there are windows on both sides with sills perhaps eight feet above the floor line. In these circumstances it is absolutely impossible to secure adequate ventilation by natural means under average conditions; the children are working in what is in effect a tank of stagnant air, and unless you can create movement of the air in the lower part of the room you cannot ventilate it. Lower the window sills, and you can achieve your object and improve the lighting at the same time.

(2) What can be done in the way of providing efficient ventilation by means of the hoppers only has been fully demonstrated by Dr. Reid in Staffordshire and by Mr. Widdows in Derbyshire.*† In Devon there are very few days in the year when it is not possible to keep any ordinary window open at least twelve inches without any special provision of hoppers and without feeling discomfort.

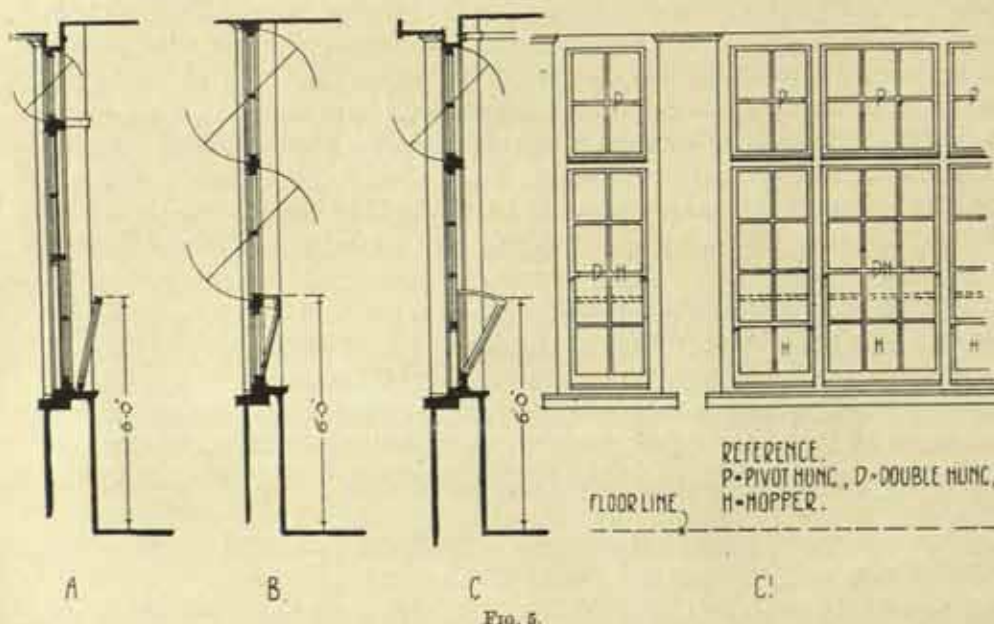


FIG. 5.

In my own office with a north-west aspect, and warmed by an open fire-place, I have often kept them almost fully open throughout the day in mid-winter. My staff do the same, and we can all speak of the good effect it has upon one's capacity for work. In fact, once you have tried it you feel you cannot do without it. The same thing can be done in schools in a greater or lesser degree according to the climate if one is keen upon it. We should look to the windows to supplement the hoppers upon every possible occasion, and when the children are not in the rooms these should be regularly air-flushed by fully opening the windows.

(3) Next it is necessary to watch the direction of the wind and act intelligently by opening the windows on the sheltered side in boisterous weather. Even when it is calm and the sun is not shining the air pressure is unlikely to be the same on both sides of a building at any time. We know that light means heat, and different aspect would tend to create difference of temperature and so keep up movement.

(4) If rooms are to be warmed efficiently and economically, it is essential that walls, floors, ceilings, and furniture should not be allowed to become chilled, or there will be great waste of heat in restoring the proper temperature, and meanwhile the rooms will be draughty. In cold weather it is a mistake to keep windows and ventilators open when the rooms have been

* *Public Health*, November 1907.

† "The Planning of Schools with Special Reference to their Ventilation": Report by County M.O.H. Stafford-

shire. "Derbyshire Elementary Schools," R. San. Inst. Sessional Meeting, Derby, 25th February 1910.

thoroughly air-flushed after sweeping in the evening; they should be closed until just before the school opens, so that the temperature may be suitable when the children enter the building. Great assistance in preserving an equable temperature is derived from boarding and felting a roof, and no consideration of economy should allow its omission.

(5) The last point on my list is also important—we want to avoid heating the incoming air. It is not natural to breathe heated air, all we want to do is to temper it. Besides placing radiators under the hoppers, I have great faith in running a high-level pipe just under the clerestory windows and find the effect excellent. Adequate distribution and control of the heat and the necessity of having well-balanced circuits should not be overlooked.

Fig. 5 shows different types of *hoppers*; those used with casement windows should have ball catches to regulate, when required, the width of opening, and in exposed positions a baffling screen is useful, see C.C.¹. There are also several kinds of patented windows which are excellent in assisting ventilation, but I cannot speak from actual experience of their use.

In regard to outlet *ventilating flues*; in Devon we provide these on the ground floor of two-story buildings if classrooms open on one side on to a corridor, but in rooms which have windows on both sides opening into the outer air we are discarding them and find no ill effects.*

Flat ceilings with the window-heads carried up as high as possible are of great assistance to ventilation and are economical in cost.

Heating.—In winter there must be a considerable reserve of heat to draw upon if window ventilation is to be successful. We use low-pressure hot-water heating for most schools, and provide on an average about 18 feet superficial of heating surface per 1,000 cubic feet of air—this, of course, is varied according to aspect.† The normal working temperature of the water in the boiler is round about 160° Fahrenheit, and that of the radiators averages about 145°. In addition to hopper ventilators, fresh air is brought in at the backs of the radiators, each grating having a clear area of about 72 inches superficial.

With hot-water heating it is a good plan to use a boiler which has a registered capacity about one-third in excess of the surface to be heated; it is economical in point of fuel consumption, leaves a reserve in hand for emergencies, requires less attention, and prevents overtaxing the heating system. A temperature controller is most useful, especially where a whole-time caretaker is not employed. Pipes and radiators are best carried on brackets, independent of the floor, to allow the space under them to be swept; for a similar reason the radiators should allow a brush to pass between the sections, and ventilating gratings should be removable. Channels in the floor can be avoided to a surprising extent by the use of stoneware pipe sleeves, provided small pits are left for jointing the heating pipes, and arrangements are made for withdrawing them. These pits and unavoidable channels should be closed down tightly with solid covers. The boiler and pipes in the heating chamber should be coated with non-conducting composition, and pipes in trenches should be packed in slag wool to prevent loss of heat. Modifications of the low-pressure heating system which successfully overcome difficulties of level of heating chambers and dips in pipes are worthy of study, and will facilitate the solution of many problems in the future.

The difficulty of comparing on the same basis tenders for heating contracts led me to adopt a tender form upon which heating engineers give the necessary information for the purpose. (see Appendix A). They work to the same specification, and have a plan given them showing the approximate position of the radiators and run of the pipes.

As to alternative methods of heating, we use warm-air grates or open warm-air stoves, as the

* The bacteriological results obtained from plates exposed to draughts from *outlet* ventilators at Broadstairs Convalescent Home for Children prepare one for the abolition of such ventilators in the near future.

† Bi-lateral lighting materially affects heating. 30 ft. super per 1,000 has been tried in Derbyshire and found insufficient if the hopper windows are kept open in severe weather.—S.M.O.'s Report 1911.

size of the room may require, for renewals or additions to small buildings. The external gratings of these should be removable and the air flues be accessible for sweeping. The gratings must also be kept well above the ground and away from gullies.

An interesting series of experiments has been carried out in Essex schools in regard to the "Heating of Schoolrooms by closed Slow-combustion Stoves burning Coke."* One of the conclusions arrived at was that under certain conditions it is possible to detect in the air of rooms so heated a very small amount of carbon monoxide gas. The maximum amount even under favourable conditions for its accumulation, viz. the overheating of the stove and the absence of ventilation, did not in certain experiments exceed one part in 66,000; and in no case of insufficient ventilation, or even when unsealed joints were used for the flue, did the amount of carbon monoxide gas exceed one part in 80,000—an amount so small as to be negligible as a

possible cause of ill health. I will quote one paragraph from the report which is significant: "No doubt some of the bad effects erroneously ascribed to the production of poisonous gases by closed stoves are really caused by an unduly dry atmosphere, the result of insufficient ventilation." Again in the Derbyshire Report†: "As we now have ample evidence that classrooms heated by hot-water pipes can be efficiently ventilated, there is no reason why they should not be adequately ventilated when heated by slow-combustion stoves. Properly constructed slow-combustion stoves, especially those with a descending flue, should not be altogether prohibited when there is through ventilation and under suitable circumstances."

I do not wish to draw any conclusion from this or to advocate the use of closed stoves, but in view of the strictures passed upon these it is evident we have not yet reached a state of stable equilibrium.

A new suggestion for warming schools has recently been put forward by the School

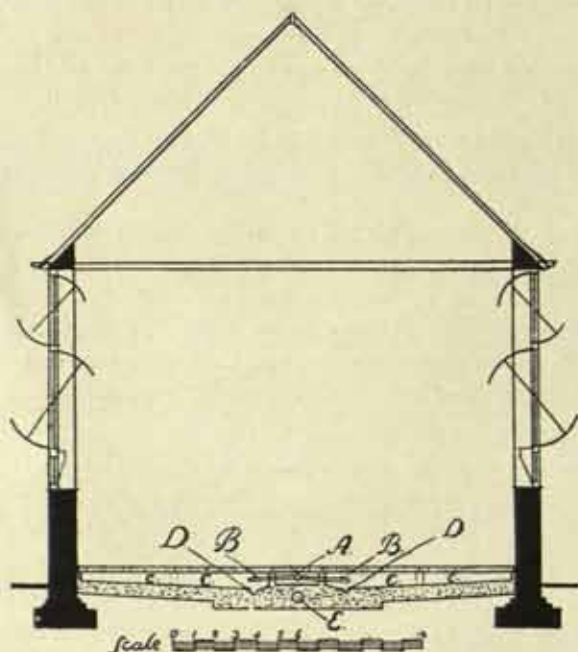


FIG. 6.—DIAGRAM SHOWING METHOD OF WARMING SCHOOL THROUGH FLOOR.

Medical Officer of Derbyshire, viz. that by warming the floors to a temperature of about 70° Fahrenheit by blowing live steam under them it might be possible to produce conditions approximating those of open-air schools. The air breathed by the children would be cold air, a few degrees higher in temperature than the external air, but each child would have the benefit of 10 square feet of radiating surface in close proximity to it. It is stated that a patent for the system has been applied for.‡ Fig. 6 shows the suggested arrangement; the idea is interesting, but one foresees difficulties in the way of its adoption.

PLANNING.

If we wish to follow recent developments in planning, we must first find out in what way changed conditions have affected the various units comprising a school building.

Classrooms.—First of all then, the requirements of Circular 709, issued in 1909, in regard to staffing have exercised marked influence upon the size of classrooms. Whereas a few years

* Essex S.M.O.'s Report, 1911.

† Derbyshire S.M.O.'s Report, 1911.

‡ Ibid. 1912.

ago most of the rooms were planned to accommodate 50 or 60 children, the practice is now becoming general to reduce the number to 40, with, perhaps, a few 48's for the lower standards where fluctuation in numbers is more frequent. Greater flexibility, too, in working the school is now possible, particularly if the classrooms vary slightly in size, since the grouping in one room of children belonging to a particular standard is no longer essential, it being recognised that the level of attainment of all the scholars in a standard cannot be equal, and that, therefore, there are children at the top and bottom of any group who may equally well be taught with others of higher or lower qualifications respectively. In other words the standard is regarded rather as a level of attainment to be reached before promotion, than as an inflexible unit for teaching purposes. Against this view it is urged that there is the danger of keeping back children who should be promoted, and *vice versa* of overtaxing children who are not sufficiently advanced. Nevertheless, it is a factor not without influence.

As to lighting, there appears to be growing difference of opinion between the merits of uni-lateral left-hand and bi-lateral lighting, or a combination of the latter with rear lighting. Continental experts condemn bi-lateral lighting almost unanimously. This is not a point which is within the province of an architect to decide, we can only await developments, and, as I have shown, there are grounds for further investigation.

In regard to glass area, too slavish faith has, I think, been placed upon its relative proportion to floor area. If a minimum area were laid down below which no classroom could be considered properly lighted, it would be a more logical proceeding than indiscriminately to apply a standard of, say, one-fifth in all circumstances. Aspect, surroundings, the width of rooms, atmospheric conditions, and numerous other influences must necessarily be taken into account.

Some discussion has also taken place as to the shape of classrooms, and there is a movement in favour of reducing the width in accordance with Continental practice. On the one hand, lighting is more evenly distributed, ventilation improved, and the angle of view from the teachers' desks reduced; on the other, the increased depth of the room may, it is said, add to the strain on a teacher's voice, and render it difficult for some of the children to see what is written on the blackboard. The additional

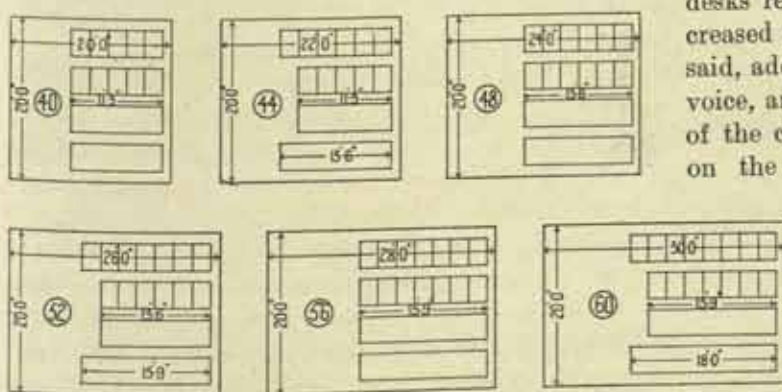


FIG. 7.—CLASSROOMS.

length of the frontage, moreover, required for the building would necessitate more rooms being placed in the wings where possibly aspect may not be so favourable. With the smaller classrooms now in

vogue, the first two objections do not appear serious, and there are further advantages in the adoption of narrow rooms, as will be evident from a glance at my diagram (fig. 7). It has been customary to use a room 24 feet 8 inches wide for classrooms accommodating fifty or sixty children; this means five and six rows of dual desks respectively in the depth of the room, and five desks in the width; intermediate numbers cannot be provided without waste of floor space. Now, with a width of 20 feet a series of rooms ascending the scale of accommodation by multiples of four can be provided without any loss of floor space. Similarly the cubical contents per head remain constant, which is not the case with the wider room, owing to the greater height required for lighting purposes. Without entering into discussion as to the sufficiency

or otherwise of the cubical area per head, I submit that any increase in this direction should be provided by additional floor area, and the reduction of the height of classrooms to 12 feet when not more than 20 feet in width. This height in my opinion is the best for ventilation. There is another point connected with narrow classrooms which is important; I refer to economy in roofing, because trusses are unnecessary.

Suitable colouring in regard to aspect and as affording variety must not be overlooked, and although its effect may be partly a matter of temperament, I am convinced it may exercise more influence than is generally recognised.

We must all have seen the appalling furniture in the shape of cupboards and other fittings, apart from desks, in the older schools, pitchforked into its place without any sense of fitness, and designed by some monster who at any rate evaded a conscience even if he was conceded a soul. We now see that the furniture of a room must be designed for its place when planning the building, and that it is as much a part of the general scheme as a door or a window.

Cross-ventilation I have already dealt with, and other phases of classroom planning remain much as heretofore.

Cloakrooms.—One result of medical inspection was to bring to light the extraordinary prevalence of pediculosis among elementary school children, and the influence of unsuitable cloakroom accommodation in fostering the disease. The primary cause is, no doubt, to be found in the homes, and obviously the first remedy should be applied there. Partial removal of the cause has already greatly reduced the percentage of cases. Under present conditions overlapping of clothes cannot be avoided, and the practice of allowing equal space for boys and girls is an anomaly. The former defect may to some extent be mitigated by the use of alternate long and short pegs recently introduced, but the remedy lies in giving more hanging space. The additional cost of such an increase in the size of cloakrooms has so far prevented its general adoption. The need of means of drying clothes is also urged as a pressing one, particularly in country schools. Thus the requirements of cloakrooms all point to the necessity of isolation and the banishment of any fitting which gives harbourage for dust or something worse, to the provision of adequate cross-ventilation and ample heating surface properly distributed.

A word of warning here may not be out of place. Some time ago I had an idea that the iron tubes used for cloakroom fittings might serve in the dual capacity of carrying the pegs and providing heat for drying purposes. Fortunately, before adopting it I heard of two cases where it had been tried and abandoned, owing to the intolerable smell caused by contact with clothes.

Lavatories.—If funds permit, it is an advantage to keep lavatories distinct from cloakrooms so as to be available for use if the latter are kept locked as they must be if cases of pilfering occur.

Corridors.—Changes in planning have also affected the width of corridors. The rule fixing the minimum width of these at 8 feet need not necessarily apply in all cases, and, if there is no question of assembly, their width is determined by the number of rooms they serve. If intended for use for ventilating purposes they should be provided with ample window area, and be shut off from possible sources of contamination.* Thus, one would now try to avoid cookery and cloakrooms, laboratories, &c., opening on to classroom corridors.

Assembly Halls.—It is now generally recognised that assembly halls as provided in the older schools were a comparatively useless adjunct, although curiously enough this discovery was made indirectly, objection being first made to them on the grounds that they interfered with the proper ventilation of the classrooms and could not in themselves be properly ventilated. Their position was chiefly due to a recommendation contained in the Board's "Building Rules," which still stands, but is no longer observed. In fact, both of the Departmental Committees I have referred

* See page 663, also figs. 21, 28, and 33.

to draw attention to the strong feeling against the former position of the hall. From the new point of view it should be so placed that it may be available during school hours for any purpose required without its use interfering in any way with the working of the rest of the school. Thus, it may be planned so that it can be used at separate times by more than one department; or, again, it may become a playroom in inclement weather, directly accessible from the playground, obviating the necessity of providing more than one covered shed for a mixed department, or it may do away with the need of such a shed in a single department.

Rooms for Medical Inspection.—Rooms for medical inspection with a waiting-room and lavatory attached are now provided in some schools. Where accommodation is limited they may no doubt be useful, but their provision is not at present customary.

Rooms for Dual Purposes.—The use of rooms for dual purposes is becoming general, e.g. if not required as centres for a district, cookery and laundry and light handicraft rooms may be used also as classrooms, and special desks are made for the purpose.* Fig. 8 shows such an arrangement. This plan is taken from an illustration published by a furnishing firm. A cookery-room may also be planned for use as a dining-room if required. The usefulness of the practice of deriving as much benefit as possible from each room was endorsed by the Departmental Committee on the Cost of School Buildings as tending to reduce the outlay upon new schools.

Shower Baths.—The provision of shower baths is attracting some attention, and several authorities have introduced them in recent buildings. Useful information as to these was given in a Paper read at the Sanitary Institute Congress in Cardiff in 1908 as a result of inquiries made by Drs. Kerr and Rose on behalf of the London County Council.† In the Annual Report of the Chief Medical Officer of the Board of Education the cost of providing twenty showers in the basement of a new building is stated to be, roughly speaking, from £200 to £300; and an independent bath house for a like number, £350 to £450. In special circumstances the Board are prepared to consider schemes for baths of this kind.‡

Playgrounds.—In view of the increase of motor traffic, exits from playgrounds delivering into the road direct, require some protection against a sudden rush of children. I have found an iron railing effective for the purpose, see fig. 8A.

Sanitation.—In sanitation trough closets have been entirely superseded by pedestal closets with independent flushing cisterns, without ball valves, usually supplied by a levelling cistern at

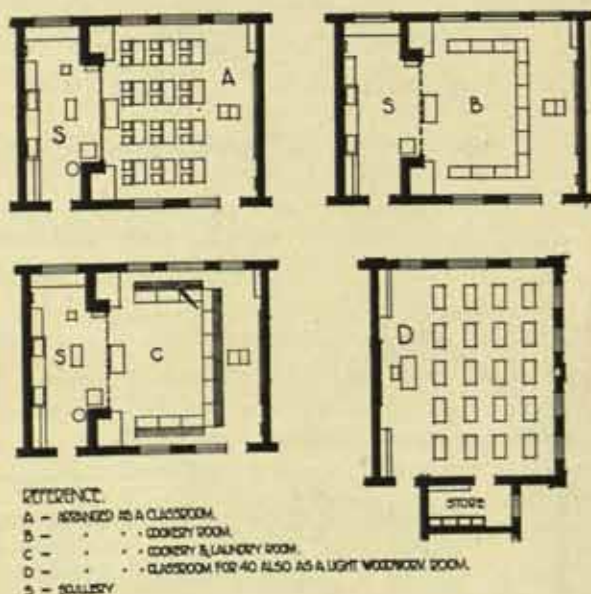


FIG. 8A.—PLAYGROUND EXIT.

PLAYGROUND

ROAD

FIG. 8A.—PLAYGROUND EXIT.

* The Arvon, North of England School Furnishing Co.
† See also "Elementary School Planning," R. G. Kirkby,
The Builder, 21st August 1909. The Use of Shower Baths
in England and on the Continent, Dr. F. Rose (Churchill, 7

Great Marlborough St., London). L.C.C. Report on School
Bathing Arrangements in Germany and Holland, Drs. Kerr
and Rose (King & Son, Great Smith Street, Westminster).
‡ Annual Report, 1912.

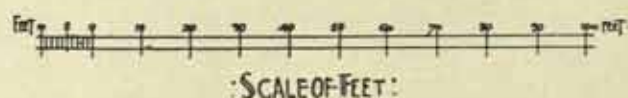
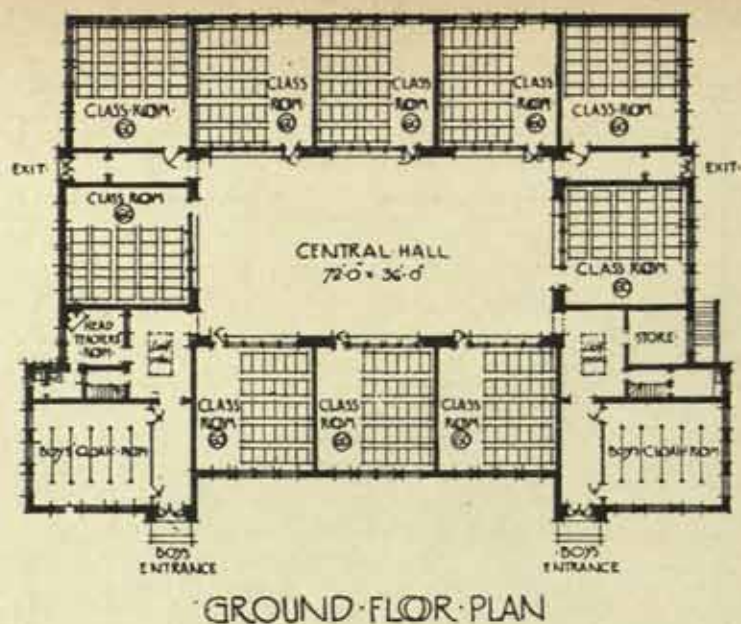


FIG. 9.—CENTRAL HALL TYPE OF SCHOOL.
 From the *Journal of the Royal Sanitary Institute*, illustrating a Paper on
 Derbyshire Elementary Schools by Mr. Widdows, 25th Feb. 1900.

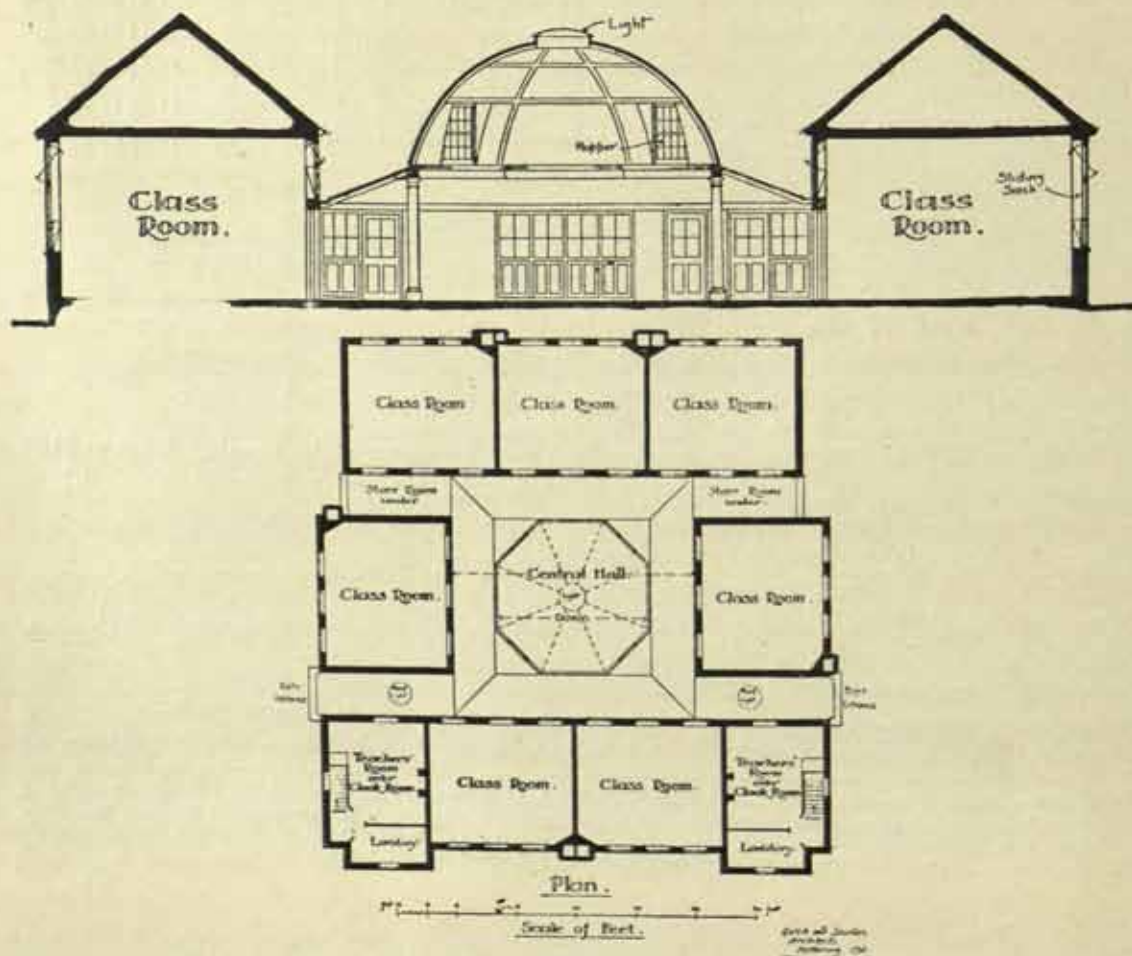


FIG. 10.

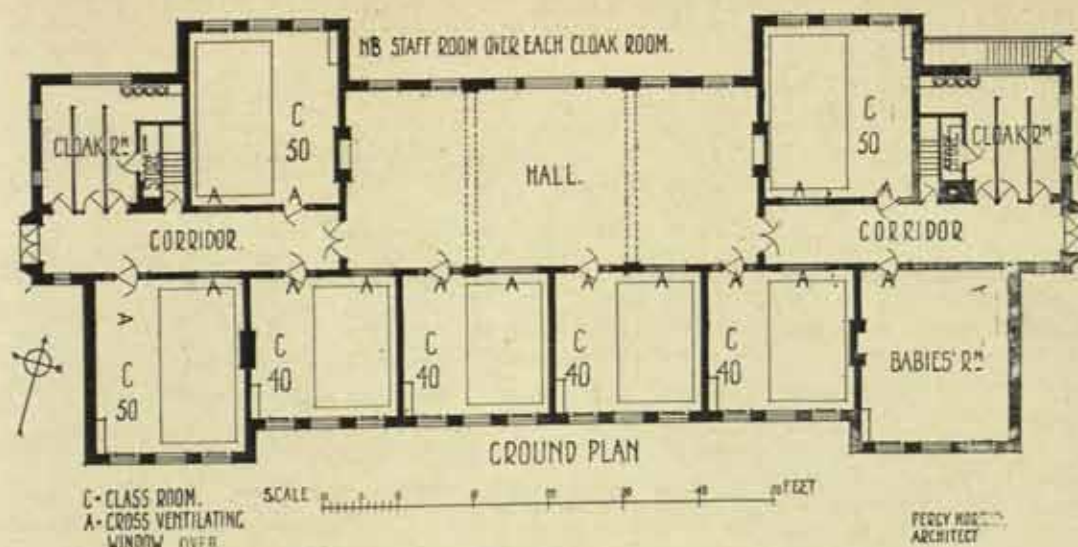


FIG. 11.—A ONE-STORY BUILDING, WITH ACCOMMODATION FOR 320 INFANTS.

the end of the range. The report of the Departmental Committee on intercepting traps is one more instance of the instability of principles which we have regarded as founded upon bed-rock, and, although inconclusive, gives much food for reflection.

Planning.—We may now glance at planning. Fig. 9 shows a central hall entirely surrounded by classrooms, a type of plan which has been much used in the past; proper cross-ventilation by natural means would be impossible. Fig. 10 is an interesting plan of a modified type designed to overcome the difficulty.* Other examples of central hall plans are shown in figs. 11 and 12,

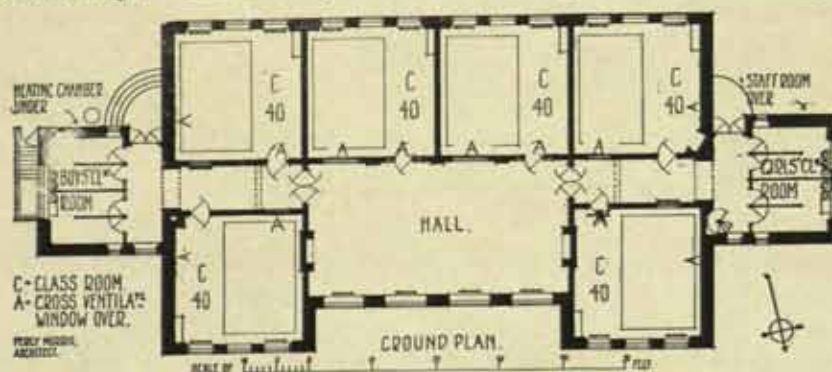


FIG. 12.—A ONE-STORY BUILDING WITH ACCOMMODATION FOR 240 JUNIOR CHILDREN (MIXED).

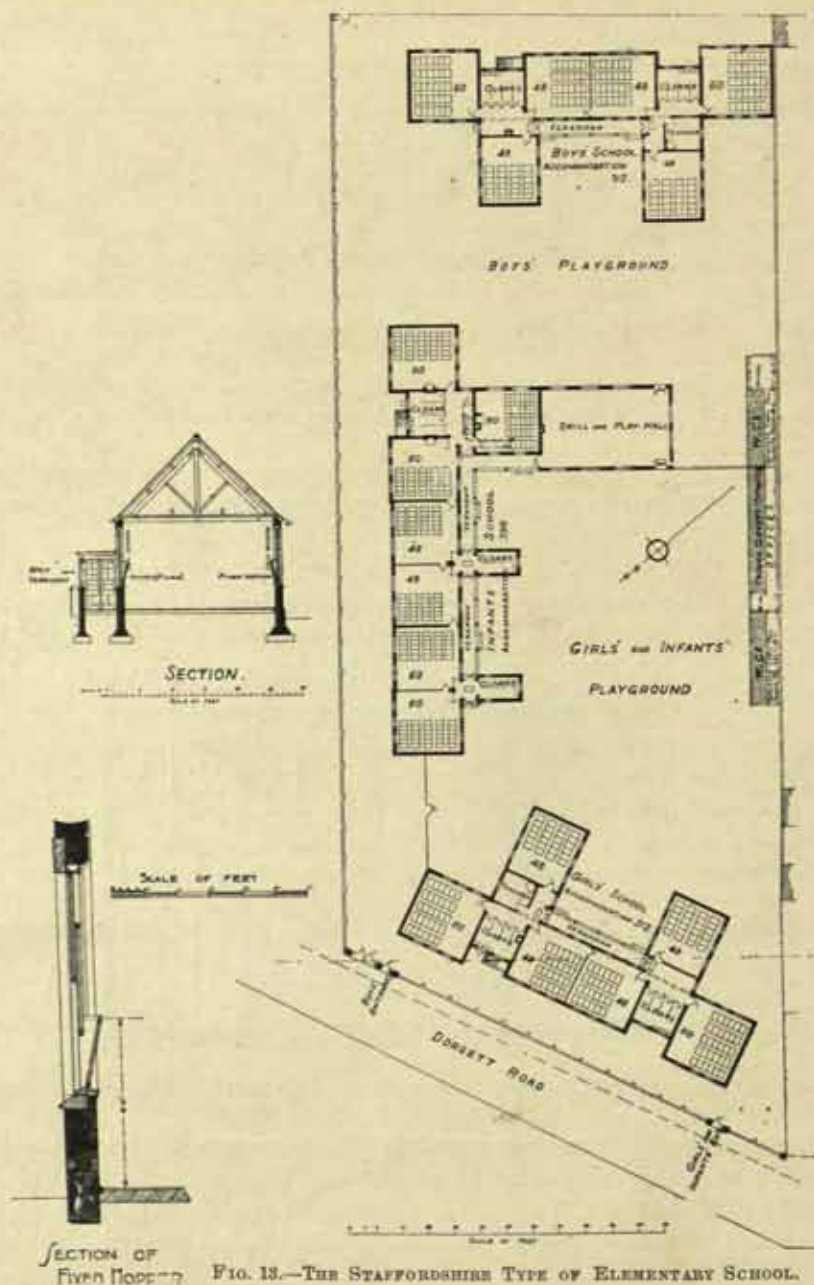
which provide cross-ventilation into the open air of all classrooms, but all of the foregoing are open to the objection that the hall cannot be used to the fullest extent compatible with present needs. You will notice that figs. 9 and 10 could only be used economically on a fairly level site, while figs. 11 and 12 were designed for sites sloping in directions at right angles to the frontage line.

As a result of general interest in the subject and the slackening of our fetters, planning is now tending in several directions, but is governed by the same guiding idea. Types may be roughly classified as follows:—

* See *Medical Officer*, 21st December 1912.

- (1) The Pavilion type (Staffordshire).
- (2) The Derbyshire type.
- (3) The External Corridor type.
- (4) The Central Corridor type.
- (5) The Quadrangular type.
- (6) Open-air schools of various kinds.

Fig. 13 shows the *Staffordshire type*, the pioneer effort in the direction of reform; a



verandah takes the place of the usual corridor, the classrooms are cross-ventilated in the manner already described. Separate cloakrooms are provided for groups of two, three, or four classrooms; access between classrooms for teachers is obtained by internal doors, and the hall is so placed as to be available for three departments.

(To be continued.)

THE ART OF ARCHITECTURE AND THE PROFESSION OF ARCHITECT.

By JOHN W. SIMPSON, I.Q. [F.].

THE abysmal and contented ignorance of the British architect of all that concerns the practice of his art in other countries than his own will not, we may hope, remain much longer a reproach as regards the younger generation. The formation of a Permanent International Committee, which brings the architects of twenty nations into personal contact, the display of Hulot's extraordinary "Restoration" of the Sicilian port of Selinus at the galleries of the Royal Water-Colour Society, the foundation of a British School at Rome on the lines of the Villa-Médicis, the enterprise of the Architectural Association in arranging an exhibition of the drawings of French students, with its accompanying visit of representatives of the Société des Architectes-Diplômés, and the writings and lectures of Blomfield and Ward, have aroused during recent years an interest in the work of our brothers in France which will surely extend to that of architects in other foreign lands.

The completion of Louvet's important work,* whose title suggests a neat solution of the old riddle, "Is Architecture a profession or an art?" now places in our hands exact and exhaustive information as to the whole training and practice of an architect in France; information which could hitherto be acquired only by residence abroad and long personal experience of the conditions. The author is an artist of repute, one of the three architects of the Grand Palais des Champs-Élysées, and a technician of the highest rank. The venerable Pascal, recalling his own early experience as one of the brilliant group who, with Louvet's father for their chief, worked under Garnier at the Opéra, finds in the work of the son the same clear-cut method, knowledge, and weight of technical experience which characterised that of the father.

The work, then, being so vouched, is of the first importance and interest to those concerned with

the planning and advancement of our national education in the art of architecture; here they will find set out for their information and for comparison with our own methods and intention the actual working results of a century's tradition in the systematic training of architect students. They will find too, perhaps to their surprise—for an entirely false view of French training obtains with us for the most part—a persistent emphasis laid upon the need for the development of the practical side of an architect's education. What will certainly surprise the English reader is Pascal's support of the author's plea for sound, and even advanced, general culture before technical training begins, on the ground that our hasty Anglo-Saxon methods are threatening to supplant the traditional education of the Latin race! "As if," says he, "the study of ancient languages were not the best of preparations, not only for the formation of judgment, taste, and intelligence, but even for the acquirement of modern tongues. I have read," he adds, "with pleasure this simply stated defence of methods which have received the sanction of centuries."

The same disquiet is shown by M. Louvet himself in his Introduction. He points out that during the last fifty years or less the exercise of the profession has been greatly changed. By reason of the incessant discoveries of science and their application to building, and of constantly increasing competition, the practice of our art has become more difficult and the acquirements necessary for an architect increase day by day; our studies become more complicated—if not more thorough—and the number of young men entering the profession grows alarmingly. He instances the fact that whereas thirty years ago some sixty to eighty candidates presented themselves for each entrance examination of the École des Beaux-Arts, and moderate efficiency ensured success, there are now some five hundred candidates; admission has consequently become far more difficult and uncertain. The qualifications proper for an architect having thus extended, the author insists upon the necessity for a thoroughly well-trained intellect which will give

* *L'Art d'Architecture et la Profession d'Architecte*. Par Albert Louvet, architecte diplômé par le Gouvernement. Avec Préface de J. L. Pascal, Membre de l'Institut. 2 vols. grand in-8o. Paris: Librairie de la Construction Moderne.

him a broad general outlook, prevent him from attaching undue importance to petty professional details, and enable him to judge largely, seize facts quickly and well, and be tolerant and eclectic while defining clearly his own artistic convictions. The point is a very important one, which may be recommended to the consideration of our own Board of Architectural Education in view of the present inadequate "Preliminary Examination" of R.I.B.A. students.

The work of M. Louvet, which has been received with enthusiastic approval by his brethren in France, is divided into two sections: the first dealing with the Formation, and the second with the Practice, of an Architect. The first volume opens with a study of what an architect of the present day should be and what he should know; followed by a consideration of how (1) the technical knowledge, and (2) the artistic qualities necessary to the formation of an architect may be acquired and developed. The next two chapters are concerned with the *École Nationale des Beaux-Arts* and the organisation of architectural teaching in France, with certain constructive criticisms thereon; followed by an account of the higher training in theory and design, the *Grand-Prix de Rome*, medals, travelling scholarships, and other rewards of a successful student's career. A chapter on the training of architects other than that of the *École Nationale des Beaux-Arts* brings the section to a close. This short chapter of eight pages, in a volume of 267 pages, gives some indication by its relative length of the overwhelming comparative importance of the National Academic School, to which all the principal schools of art throughout the country are affiliated; their students following the same course as at the Paris centre and the designs they produce being all sent to Paris, to be judged at the same time and by the same examiners as those of the students of the National School. A still more convincing proof of the predominance of the *École Nationale des Beaux-Arts* is the fact that although every Frenchman under thirty years of age is free to compete for the *Grand-Prix de Rome*, with its consequent honour and assured livelihood for the winner, no student outside the *École* has ever succeeded in taking it, or even in gaining admission to the final competition. Almost alone of eminent French architects, Ed. de Perthes, the author of the church of Sainte Anne d'Auray and the Hôtel de Ville of Paris, in collaboration with Ballu, did not owe his training to the *École Nationale*. His case is

still quoted as showing what may be done by extraordinary gifts, combined with tremendous energy and unremitting work!

Shall we ever have such a school? The Royal Academy makes no sign, and can claim no such exclusive concentration of high talent in its teachers and students as is required to place a great central school high above all rival institutions. The advance of outside schools is, in fact, sapping the position the Academy once held, and it may one day find itself outclassed by the growing activity of University and State-aided enterprises. The Royal College of Art, under some keen-sighted and energetic Minister of Education, may perhaps turn from the propagation of "art masters" to the training of artists, and develop into the great National School with the State at its back; but the "atelier" system, which is the foundation of the French organisation, seems hardly appropriate to the independent and critical temperament of the British student. That young gentleman, though not wanting in energy, is not very prone to the hero-worship necessary to enthusiastic belief in his master and comrades; and without it the *esprit de corps*, which excites and sustains desperate rivalry between different studios, is lacking.

The question, too, of the singular facilities for obtaining commissions for important work, which are offered by the numerous open competitions in this country to anyone capable of designing it, has to be considered. It is quite doubtful whether students who have to earn their living by their profession will ever give the time necessary for scholarly accomplishment while they are tempted by such opportunities of obtaining immediate and comparatively lucrative employment on actual building.

The reading of M. Louvet's book suggests many similar reflections on the difference, not only of the methods of education in his country and our own, but of the conditions of actual life which influence it.

In defining the gifts and attainments required of an architect nowadays, the author emphasises the need for those administrative qualities which, as he rightly says, have been often held in too little esteem by architects themselves. "The pretentious assertion 'I am an artist,' often made by those with little claim to the title, has been deemed a sufficient reply to critics; a fallacious position, which has done us much harm, since to be an artist is but part of being an architect." He adds,

caustically, that the idea belongs to a period when the artist (often very incompetent!) despised almost all his fellow-citizens, especially shopkeepers, contractors and the like, as "bourgeois"; professors and magistrates having also their exclusive castes, while all were themselves objects of the contemptuous disdain of the military class.

Having described the qualities which go to the making of a competent architect, and the means of forming him as regards both design and technical knowledge, M. Louvet proceeds to the second portion of his subject, which treats of the actual practice of the profession. This fills a volume nearly twice (pp. 468) the size of the first, and is divided into two Books, each of eight chapters; the first Book dealing with private practice generally, the second with the various public and official services in which so many French architects are engaged, and with public competition.

The author covers the whole field of architectural practice, and it is delightful to observe how the logically constructive mind of an architect has dealt with the mass of material before him. The book is as orderly as a specification, while its literary quality informs the most technical detail with interest.

In so rich an orchard it is difficult to select fruit without feeling that better might be offered for the reader's tasting. Is he of a practical turn of mind? He will find herein recited all the mysteries of the "séries-de-prix," "rabais," "prix-en-demande," "mémoires," and all the other elaborate facts and fictions by means whereof builders' estimates and accounts are made up in France. Is he more interested in drawings than in quantities? Here are set out all the French methods, scales, and studies usual both for design and execution. The admirable "Code" of an architect's obligations as regards himself, his brethren, his clients and his contractors, which was drawn up by Guadet, is given in full. This "Code" must be subscribed by all postulants for admission to the two leading Societies of architects, and full information as to these and the other French associations is also given. The constitution and conduct of an architect's office, his remuneration, the preparation and administration of contracts of divers sorts for different buildings are described; the services of architecture attached to the Ministry of Public Instruction and Fine Arts; the "Bâtimens Civils," "Palais Nationaux," and "Monumens historiques," those of the City of Paris, the

Department of the Seine, and the provincial administration—all and everything pertaining to the "complete architect" are told of in clear, unaffected, and readable narrative.

The profession of architecture is, of course, entirely free in France, subject to taking out a Government licence, which will probably be abolished before long in favour of an income-tax. No diploma or reference of any kind is needed in order to practise. The question of compulsory qualification and registration has long been debated there, as in this country, and with as little result; some architects defending the principle of absolute liberty, others holding that a diploma or certificate should be required of an architect as of a doctor or lawyer; others, again, proposing systems which shall combine freedom in principle while distinguishing competent, or rather educated, architects from the ignorant and incapable. It may be of interest to British architects to give Monsieur Louvet's very fair and temperate summary of the reasoning advanced in each case.

"It is," he says, "rather difficult in the present day not to bow to the word 'liberty'; but to the doctrine that any man should be free to practise a profession unfettered save by his own responsibility, there is the obvious limitation that his liberty must not be exercised to the injury of others. The physician must give proofs of his studies and qualifications before he can practise, since the public must be protected from the incapable and unscrupulous. The advocate must fulfil certain conditions before he is admitted to the Bar, if only that the litigant may be assured of the integrity and honour of the man to whom he entrusts his cause. Even with these precautions there are not a few indifferent doctors and dubious lawyers; yet who would claim absolute freedom for everyone to practise these professions? It would therefore seem, at first sight, reasonable to regulate and limit the architect's profession in the same way, so that the public may be informed as to those whom they employ. Our functions are important from many points of view: the architect is a constructor, and must look to the stability of buildings; he is a trustee charged with the pecuniary interests of his client; his buildings by their external design affect the appearance of a town; and in planning their interiors he performs in some sort a social duty. Good arrangement and planning imply convenient and healthy buildings of all kinds, and the development of land without waste and without loss of light and air. Why not, then,

close the profession to all but those who can show proofs of their studies and character?"

He continues: "The supporters of freedom, on the other hand, maintain that all capacity should have the chance of asserting itself; and that, so long as the architect is responsible for his work, the dangers of entire liberty are but small. Further, that building owners will prefer to employ architects with proper credentials, and the incapable will be automatically eliminated; and that even were the profession closed, its boundaries would be so wide as to include the unworthy, who would be none the more competent for having official registration. Finally, that popular feeling being against restrictions, the present freedom of the profession accords with modern thought. As regards the instance of such privileged callings as those of the doctor and lawyer, these are but survivals of ancient federations which would in our days have been based upon entire freedom, responsibility being sufficient to prevent its abuse.

"Others again suggest a compromise. The liberty of the profession is to remain untrammelled, but the actual title of 'architect' is not to be used except by those who have passed certain examinations, or who can offer other proof of adequate study. Thus freedom will be assured, but the public will be enlightened; and while general admission will be wide, the higher qualifications of diplomas and scholastic honours will still remain in another category. The three solutions suggested for this important question become of increasing importance in view of the ever-growing number of architects and the competition, especially in the provinces, of unqualified persons. The true architects demand protection from intruders who thrust themselves into their place by mere effrontery, politico-social support, or otherwise."

It all sounds very familiar; and it is interesting to find that M. Louvet pronounces strongly in favour of protection of the word "architect." "Leave the profession open to all," he says, "but reserve the title of 'architect' to those who can show a reasonable degree of the necessary technical knowledge. This solution of the question does not create a monopoly, and it guards public authorities and the public generally from mis-

conception." Moreover, in the author's opinion, it would not detract from the value of the diplomas and degrees already existing in France. These he proceeds to describe for the information of those who may wish to know how the professional standing of an architect may be ascertained under existing conditions.

I am greatly tempted to quote Monsieur Louvet on the subject of competitions, but must refer my readers to his book. I cannot forbear, however, to mention his entire disbelief in the possibility of effective anonymity in competitions. This is, of course, as he admits, owing to the French system of appointing juries instead of a single assessor as in England; and his views may be commended to the attention of those competitors who, impatient of awards which do not jump with their own convictions, clamour for many assessors instead of one. Let them not suppose that, if the principle gains ground, such juries will be composed of architects alone, even were that an advantage over the present system. Here, as in France, laymen will find their way on to the jury, and that in increasing numbers until, as there, the architects are often in a hopeless minority and the "jury" becomes to all effect and purpose our old friend the "Building Committee" of thirty years ago, from whose monstrous decisions we were saved by insisting on a professional assessor.

M. Louvet's book is indeed most valuable; so patently valuable that one wonders why no one has written it, or its counterpart, long ago in every civilised country. For the client, it is a manual of the whole procedure of building business; for the architect, it forms a standard of practice; for the Courts, it is a work of reference, showing exactly what architects of good standing accept as their duties, and how they go, or should go, about them. To those who wish to enter the profession is displayed the whole system of the various studies and methods available and proper; while to building owner and contractor alike are explained the other sides of their contract, their duties to one another, and the position of the architect who administers the agreement they have entered into.

An admirable book! Where is the Louvet who will write the like for England?

REVIEWS.

THE NEW DELHI.

East India (Delhi): First Report of the Delhi Town Planning Committee on the Choice of a Site for the New Imperial Capital. With Two Maps. Price 1s. 2d.
Ditto: Second Report regarding the North Site, with Medical Report and Two Maps. Price 1s. 3d.
Ditto: Final Report regarding the Selected Site. With Plan and Two Maps. Price 1s. 8d.

Published by H.M. Stationery Office.

Since the conquest of Sicily in the twelfth century and the establishment of a great and durable Southern empire by our Norman ancestors, and the building of Palermo as its capital, no such opportunity as the creation of New Delhi has occurred in which to give lithic expression to the principles on which both our Indian Empire and its Norman prototype were built up. The fact that we have so far successfully solved the difficult problems of dominion over varied races, with their diverse religious and social customs, makes it hopeful that in spite of past mistakes we are about to show India in the erection of its new capital that we appreciate the beauty of its indigenous arts, and will give full opportunity for their exercise consistently with the claims of science in the interest of health, and of economical organisation in the planning of governmental buildings. The result of this policy as pursued by the Normans in Sicily by the employment of Saracenic building construction and Greek decoration was the creation of a new, beautiful, and interesting architectural style.

While continental countries have been at work for nearly half a century, in Great Britain the science of town planning is barely ten years old; but although it has already produced a voluminous bibliography, we can recall nothing, as regards the preliminaries and general lay-out of a town, to compare in value (for the student) with the three Reports presented to the Indian Government by the Delhi Town Planning Committee, dated respectively 13th June 1912, 11th March 1913, and 20th March 1913, and issued as Parliamentary Blue Books. These reports are models of what is needed in all such cases—a veritable gold mine for the professional town planner. Here will be found embodied all the "Suggestions to Promoters of Town-Planning Schemes" printed in the JOURNAL of the Royal Institute of British Architects, Third Series, Vol. XVIII., No. 18, and published by the Institute as a separate Paper in 1911.

We might paraphrase the saying of Sir William Flower (the curator of the British Natural History Museum), that a museum was "a system of well-written labels illustrated by natural specimens," and describe these reports as six first-class maps, illustrated by a few pregnant paragraphs.

The *First Report* deals with the considerations governing the choice of a site; gives a general

description of Delhi and its neighbourhood; states that the flow of the Jumna River is from 100 cubic feet per second in the cold season to 75,000 cubic feet in ordinary flood-time, the flood causing all the land in the Delhi area below the contour line of 680 feet to be unsuitable for permanent occupation; that the estimated area of land required for the new city is ten square miles for the civil and 15 square miles for the military, in addition to the area for expansion; discusses the alternative sites available, the importance of land acquisition or control over existing property within the area, and concludes with a strong recommendation in favour of the southern site.

The *Second Report* is devoted to a reconsideration of the North or Durbar site, advocated by Sir Bradford Leslie in a paper read before the Royal Society of Arts in London, challenging the Committee's recommendation. The choice of this view was supported more or less by the English Press, but the Committee have had no difficulty (barring great waste of time and expense) in demolishing every argument advanced in favour of this northern site when compared with the advantages of the southern. Its maximum building area is about five square miles, without any provision for extension, and its adoption would involve nearly a million pounds sterling in excess of the southern site.

The *Final Report* deals with the town-planning of the selected or southern site itself. It refers first of all to the regrettable necessity of leaving the poor suburb of Paharganj, with its 15,000 souls, intervening between the old and new cities, and recommends the Government "to obtain such control over it that no detrimental private interests can be created."

The general principles to be observed are set forth as follows:—Foresight in providing for every requirement of the future; health, ample air spaces, and room for expansion. Beauty combined with comfort. Convenience of arrangement as well as communication; main traffic routes must be parkways capable of extension in width and length. Preservation of natural beauties—hill, wood, and water—and of monuments of antiquity or fine modern architecture. Space for recreation. Due regard to economy.

The special principles governing Delhi are the realisation of the dominant idea of a new Imperial capital, absorbing the traditions of all the ancient capitals, and destined to be the seat of a Government exercising peaceful domination and dignified rule over the traditions and life of India. The adaptation of the scheme to physical conditions chiefly centres on making the city suitable for a seven months' residence in a climate which varies during that period from a maximum shade temperature of 105° F. to a minimum winter temperature approaching freezing-point. Add to this a bad malarial record and violent variations in climate,

rainfall, and river flood, and the importance of safeguarding health is obvious. In describing the selected or south site the Committee observes that the panorama of the present city, the new city, and the monuments and cities of the past, stretching below to the river as seen from the ridge drives, should be one difficult to match for charm. This site is excellent, moreover, from the point of view of health. The Cantonment area will be to the south-west side of the ridge. There is scope for the fullest communication every way.

DESCRIPTION OF THE LAY-OUT.

The Government House, the Council Chamber, and blocks of Secretariats are the centre and motif of the whole lay-out, and are so placed on Raisina Hill as to command views of the new city on every side and to be viewed by all the inhabitants thereof. This Government site appears as a spur of the ridge itself. Behind the hill a raised forum would be built, flanked by the Secretariat buildings and terminated at its western end by the mass of Government House and Council Chamber, with its wide flight of steps, portico and dome, leading the imagination from the machinery of government to the moving power itself. The forum will be approached by inclined ways on its north and south sides. The axis of the main avenue centres (eastward) on the Gate of Indrapat, the site of the oldest of all the old Delhis. "Right and left the roadways go and weld into one the Empire of to-day with the Empires of the past, and unite government with the business and lives of its people."

Behind Government House to the west come its gardens and parks, flanked by the general buildings of the Viceregal estate. Beyond these again, on the ridge itself, is a spacious amphitheatre, to be made out of the quarry from which much of the stone for roads and buildings may be cut. Above this comes the reservoir and its tower. Across the main axis will run the processional avenue, terminating to the north in the new station, and to the south in the Cathedral. At the intersection of this avenue with the main axis a *place* will be formed, around which will be gathered the buildings of the Oriental Institute, the Museum, the Library, and the Imperial Record Office. To the south-east will be the park area, in which stand the ancient monuments of Safdar Jang's Makhbara and the Lodi tombs. This area can be developed gradually as the city expands and has need of public institutions of various kinds.

The axis running north-east from the Secretariat buildings to the station and towards the Jama Masjid will form the principal business approach to the present city. At the railway station another *place* will be laid out, around which will be grouped the banks, shops, and hotels, with the post-office in symmetrical relation

to the station. To the south-west of the station will lie the houses of the local administration and the residences of the European clerks. Between Talkatora Garden and Paharganj will be the area for Indian clerks, the Press, and other Government establishments. Due south of the forum is placed the residence of the Commander-in-Chief.

Round the Viceregal estate and the forum the residences of the Members of Council, the Secretaries, and other officials of the Government of India are to be grouped.

To the south-west of Government House the club will be situated. To the south of the club a low ridge divides the tract into two portions. That to the west is well adapted for a golf course, while the eastern side is designed for a racecourse, the ridge itself offering unusual facilities for locating stands and seeing the races.

The fire station, with its tower, will be built to balance the lofty observatory buildings of the Jantar Mantar in the position shown on the plan.

The avenues range from 300 feet to 60 feet, with the exception of the main avenue east of the Secretariat buildings, where a parkway width of 440 feet has been allowed. The widths of the avenues depend on the varieties of trees selected. In all main avenues it is proposed to arrange for running water with fountains at intervals as features. The principal avenues, in addition to the main avenues, enclose the Imperial centre and are the outer main sinews of the frame. The commemorative column, lying on the axis, is the focal point of the roads and avenues on the parkway. A ridge-drive, as shown on the Committee's plan, will be laid out.

Communication with the present city and civil lines will be by way of the avenue towards the Jama Masjid. Inside the city this bifurcates, one branch leading towards the King Edward Memorial, while the other goes north towards St. James' Church and the Kashmere Gate. The present civil station and the new city will also be connected by broad roads running through the Sadr Bazar.

Provision has been made for parks in the following places:—

The Viceregal estate.

The parkway from Indrapat to the Secretariats.

The park round the Lodi tombs and Safdar Jang's Mausoleum.

The park area to the south of the club, containing the golf links and racecourse.

The park between the new and the present city, roughly 1,000 yards in width.

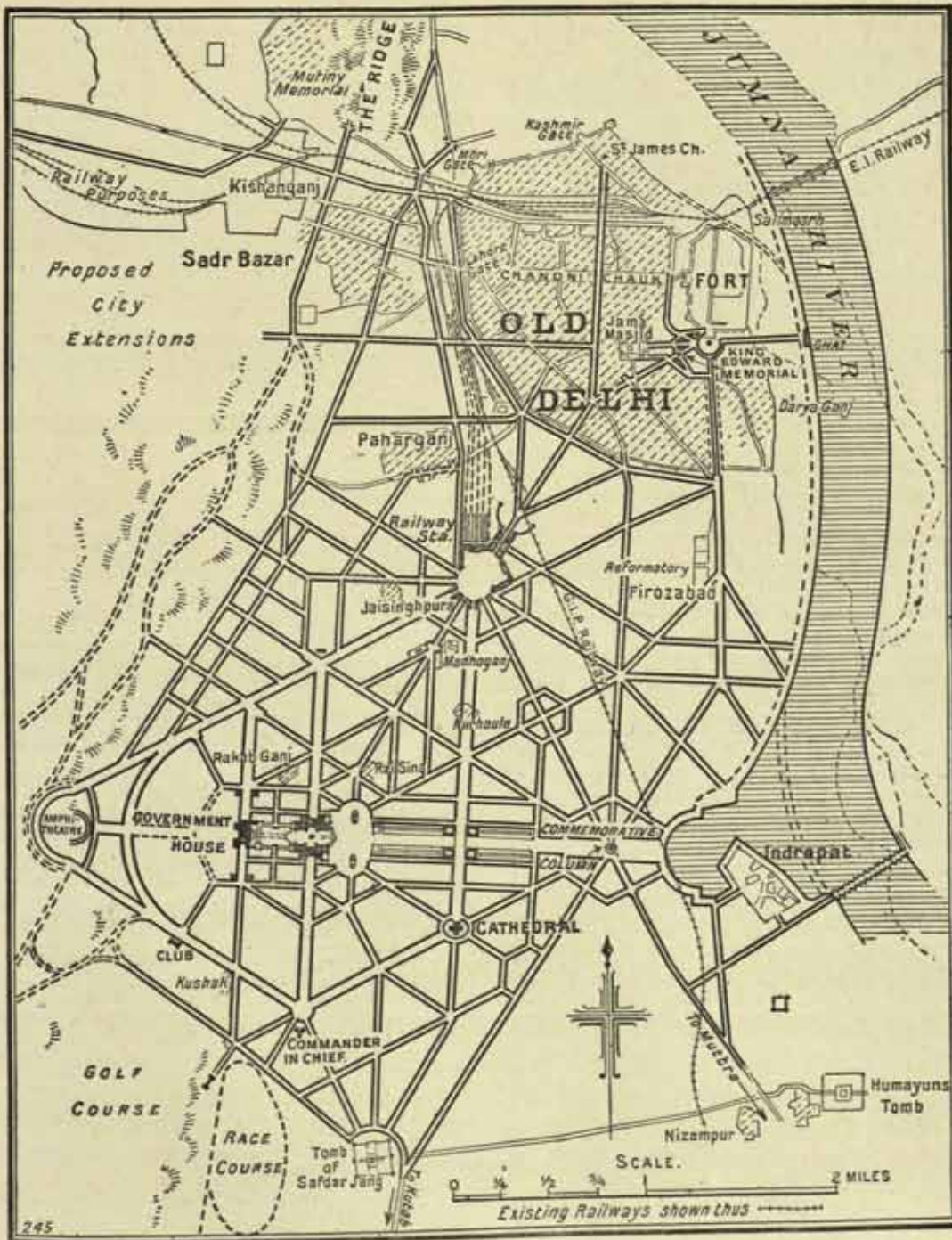
The afforested ridge.

The lay-out has been designed within lines of deviation so as to give the greatest possible freedom, and provides for a city on a ten-square-mile basis; but the alignment of avenues and roads is equally suited to a restricted lay-out

of the nature that was considered for the north site, namely, an area of about five square miles. The lay-out has been made independent of the lake effect.

The Report contains recommendations as

to water supply and irrigation, storm and sewage drainage, railways, road construction, tramways, through traffic routes, parks and open spaces, arboriculture, river treatment and water effects, and future development, as the outcome



MAP SHOWING THE SITE OF THE NEW INDIAN CAPITAL.
From The Times, by permission.

of the information given in the two previous Reports and supplied by the Government staff of experts, civil and military engineers and surveyors, medical officers of health, statisticians, &c.

In the future health statistics of a city designed in this manner India will possess a practical demonstration of the value of scientific sanitation which should go far to remove the present inertia existing among the uneducated natives.

Space does not permit of our quoting as largely as we could wish from this part of the Report. It is all of great interest and necessary to a grasp of the scheme in its entirety. The following particulars may be noted as of special interest.

Water Supply.—The drinking-water supply will be from the Jumna River, just above Delhi.

Disposal of the sewage is to be by means of an irrigation farm area on the Bela, south of Indrapat, and the ventilation of the sewers by surface gratings in manhole covers where roads are wide and areas not closely built upon. The Committee advise that all drains and sewers, without exception, should be maintained at public expense, that the whole of the sewage should be water-borne, and that the roof-water be taken into the house drains to assist in flushing the sewers. Also that the Liverpool system of flushing all the house drains four times a year be adopted, and that by payment of a small fee any householder may have his house drains flushed at any time.

Railways.—In addition to the present five stations a new terminal station is to be provided centrally between the old and new cities and the Cantonment, and into which every passenger train arriving at Delhi will run, whether on the broad or metre gauge. The traffic to and from the new city and the Cantonment will, it is estimated, justify the necessary expenditure by the various companies, and the lines are to be kept low enough to prevent the need of bridges, which, with their sloping approaches, so often destroy the road vistas and are ugly in themselves.

Roads.—The reasons for the divergence of existing traffic roads through the main areas are given, and the great importance of limiting the width of the wearing surfaces of new streets to a minimum is emphasised. It is advised that in every case the roads in the new city should be finished in impervious material of a bituminous character, on account of the frequent repairs and cost of watering involved for water-bound macadam, where dust is so prevalent and so prejudicial. An effort will be made to trap and retain dust, possibly by lowering the grass-margins adjoining the roadways; and it is further suggested that these grass-margins might be so arranged as to be occasionally covered by irrigation water, permanently entrapping the dust and adding it to the soil. In the interests of appearance the main avenues are to be graded in disregard of the smaller irregularities of the existing ground, avoiding as far as possible

convex surfaces in longitudinal section, and the cross-fall in asphaltic macadam roads is not to exceed one in forty-eight. The method of lighting will be by lamps suspended across the roadways between columns concealed as far as may be among the trees.

No tramway routes are suggested for the new city, the Committee evidently sharing in the anticipation of motor-omnibus services superseding trams. Ample width of main roads is, however, being provided should this forecast not be verified, and though not made too wide at first, no traffic possible in the future can congest them. If the frontage lines and all permanent structures are kept well back, roadways can cheaply be widened whenever required. Where crowded roads intersect ample space will be allowed.

Parks and Open Spaces.—There is plenty of space for parks and smaller recreation grounds, and, if planted as early as possible, may for many years be left in a wild state, dustless and pleasant to the eye. It is pointed out that before the avenues are planted it is essential to determine the design of the buildings, as buildings and trees are dependent on one another for effect. Both the size and shape of the trees in avenues are important, and the Committee have selected thirteen kinds out of a large number available, and these are to be grown in readiness. A deviation from the kind of tree selected to suit each avenue means a loss of a large general effect, which in New Delhi ought to be very fine.

River and Water Effect.—The plan shows provision for an improved and healthier river frontage from Wazirabad on the north to below Indrapat (a distance of between seven and eight miles) by raising the level of the Bela above the permanent lake level at Indrapat. To provide material for this and levelling-up areas within the city an ornamented bay or lake would be formed at the river or east end of the main avenue. The cost of this river-training and pool formation is estimated at £250,000.

The Report closes with the expression of the Committee's satisfaction that they have been in personal touch with most of the members of the new Committee appointed to carry out the actual task of constructing New Delhi. They can, therefore, count on continuity.

This information is largely embodied in the plans, which include:—

First Report.—1. Inch scale of present Delhi and its neighbourhood, coloured to show the physical features; 2. Ditto, coloured to show land acquisition proposals.

Second Report.—1. Two-inch scale of present Delhi and its vicinity, coloured to show the areas subjected to flood, &c. &c.; 2. Ditto, showing diagrammatically the depth of subsoil water, the comparative prevalence of the various species of

mosquitoes, and the percentage of enlarged spleen in children in the various areas.

Final Report.—1. Four-inch map (1912) showing the lay-out of avenues and roads; 2. Ditto, ditto, showing the alignment of main sewers, rising mains for drinking and irrigation water.

Contour lines at every five feet are clearly figured on the four-inch scale maps attached to the Final Report.

There are also plates of cross-sections of the proposed main axis or parkway, 440 feet wide, of typical avenues 300 feet and 150 feet wide respectively, and of a 60-foot road. The Final Report gives no calculation as to cost, but it is to be hoped that no considerations of outlay will be permitted to interfere with an adequate realisation of the scheme.

We should have welcomed photographic views of ancient Delhi and its principal monuments, many of which form the terminal features of the principal new avenues, but these can probably be seen among the productions of the Archaeological Survey of India.

W. H. SETH-SMITH [F.].

FIRE PROTECTION.

Fire Protection in Buildings. A Practical Treatise for Engineers, Architects, Surveyors, and Property Owners. By Harold G. Holt [A.] 8s. Lond. 1913. 8s. 6d. net. [Crosby Lockwood and Son, 7 Stationers' Hall Court, E.C.]

Mr. Holt has prepared an interesting book. He frankly confesses, however, that it is the outcome of various magazine articles and is avowedly a compilation of facts. He has ranged over a wide area. There is an introductory chapter on the work of the British Fire Prevention Committee. Subsequent chapters are devoted to Fire Extinction, Fire-resisting Construction, and Public and other Regulations on fire matters. There are also various illustrations of modern methods of fire-resisting construction to be seen in the case of Selfridge's in Oxford Street, Whiteley's in Westbourne Grove, the Woolworth Building in New York, &c.

A reprint of magazine articles usually results in no very exhaustive treatment of any subject. Mr. Holt exhibits this fact in his work. He only touches upon a few of the salient points of his subject, and it is apparent that he has not had facilities for checking and correcting some of the statements he makes. It would be invidious to comment too closely upon these points, as he has done a great service in calling attention, perhaps quite unintentionally, to the serious disadvantages under which the architect as well as the property owner suffers in the matter of fire protection.

The architect may desire to safeguard his buildings from fire, and may desire to use the best materials and to build in the best possible manner. The owner may also desire to preserve his property

and usually to spend his money wisely. They will both have little difficulty in settling the best plan, and possibly the best design and decoration, but when they arrive at the question of the effect of the adoption of any particular kind of construction, the position of the building under consideration, or the use when erected, upon the fire risk as measured by the fire premium, they have little or no guidance. Mr. Holt plainly emphasises this point when he states that certain rebates are allowed by the Fire Offices for various specified forms of construction, but this is confidential information only for the Fire Offices.

Those who have to deal with the property to be found in crowded districts, know too well the difficulty in dealing with building schemes in the absence of any approximate information of the burden of fire premium.

It is to be regretted that the Fire Offices of this country do not frankly take their best customers into their confidence, as do the offices in America. The Universal Mercantile Schedule issued by the American Offices gives in the closest possible detail exact particulars of the fire value of every kind of construction. Where dangerous elements occur it is shown how the risk may be brought down to a normal figure. At the present time, when efforts are being made to devise economical rural dwellings and school buildings, it would be no doubt a valuable factor in considering the possibilities of certain materials if such a schedule were available in this country. Its absence prevents the proper use of new methods and the development of new ideas, as those most likely to be interested are not prepared to embark on novelties without some definite return.

Mr. Holt also indicates the unfortunate conflict of opinion between local authorities and insurance experts on such questions as the construction and arrangement of doors provided to protect openings in party walls. For instance, it is not certain that anything beyond iron doors may be used in London as a compliance with the Building Acts. Anything else must form the subject of special and particular enquiry by the London County Council. This obtains, although there have been in use for years several types of doors which have been scheduled by the practical experience of the Fire Offices as equivalents for the same purposes as those covered by the Building Acts.

The British Fire Prevention Committee are doing a useful work in testing various materials, but a far more useful and practical work could be done if there could be some direct association between such a body, the large local authorities, and the chief Insurance Offices.

If Mr. Holt should issue a second edition of his book, he will no doubt wish to make several amendments and corrections. The schedule of fire-resisting materials in the Appendix II. is out of date, as it was repealed eight years ago. The

statement at the bottom of page 58, that the Factory and Workshop Act, 1901, and London Building Acts Amendment Act, 1905, provide regulations for the plan and construction of staircases of various types, needs modification, as neither of these Acts provide such regulations. What Mr. Holt has evidently had before him has been the list of suggestions issued by the London County Council for means of escape. The Appendix XIV. might well be omitted, as anyone capable of making use of the book would not be likely to need an explanation of such elementary terms as "Deflection," "Flange," "Gutter," "Riser," "Sash," &c.

CHAS. A. DAUBNEY [A.].

LIVERPOOL STUDENTS' DRAWINGS.

The Liverpool Architectural Sketch Book: being the Annual of the School of Architecture of the University of Liverpool. Edited by C. H. Reilly. 40. Lond. 1913. ["Architectural Review," Carlton House, Westminster.]

The Liverpool Sketch Book is an exhibition in miniature, and takes the place, as Professor Reilly suggests in his happily worded Introduction, of an annual show of students' drawings for those who cannot get up to Liverpool. The Book is divided into two parts, measured drawings of such work as St. George's Hall, L'Ecole de Médecine, Manchester Old Town Hall, the Propylæa at Munich ("even the youngest architect," says Prof. Reilly, "may profit by the work of the masters"), and, secondly, original designs, of which about half are solutions of subjects set for the Institute Final Testimonies of Study. Almost all the work shows the delicacy and repose we have learnt to expect from Liverpool. Particularly pleasing are Mr. Sykes' War Memorial, Mr. Dod's Wall Monument, Mr. Prestwich's Ball Room, and Mr. Weekes' Screen Colonnade. And there are some sheets of composition of full-size details which the School has the art of making peculiarly attractive. One criticism that suggests itself is that elevation is thought more of than plan. Next year it would be interesting to see one large planning scheme worked out.

W. G. NEWTON [A.].

Books Received.

The Theory and Design of Structures: a Text-book for the Use of Students, Draughtsmen, and Engineers engaged in Constructional Work. By Ewart S. Andrews, B.Sc. Third Edition. 80. Lond. 1913. 9s. net. [Chapman & Hall, Ltd., 11 Henrietta Street, W.C.]

Further Problems in the Theory and Design of Structures: an Advanced Text-book for the Use of Students, Draughtsmen, and Engineers engaged in Constructional Work. By Ewart S. Andrews, B.Sc. 80. Lond. 1913. 7s. 6d. net. [Chapman & Hall.]

The Clerk of Works: A Handbook on the Supervision of Building Operations. By George Metson, Licentiate R.I.B.A., Author of "The Builder's Foreman" and "Quantity Surveying." 80. Lond. 1913. [Crosby Lockwood & Son, 7 Stationers' Hall Court, E.C.]

Homeland Handbooks.—Bath Abbey: Its History and Architecture. By Edwin Morcombe Hick, Licentiate R.I.B.A. 80. Lond. 1913. 2s. net. [Homeland Association, Ltd., Chandos Chambers, 15 Bedford Street, Strand.]



9 CONDUIT STREET, LONDON, W., 30th August 1913.

CHRONICLE.

Main Roads in Greater London.

As a result of the recent deputation from the Institute to the Prime Minister [see JOURNAL, 26th July, p. 641] Mr. John Burns, at the request of Mr. Asquith, has consented to preside at a Conference of local authorities and others interested in the improvement of arterial road communication in Greater London. Mr. Burns proposes that the Conference should take place in the autumn, but the precise date has not yet been fixed. All the local authorities of the Greater London area have been invited to send representatives to express their views in regard to the matter or any particular aspect of it.

The Admiralty Arch Approach.

Since the publication of the last number of the JOURNAL, the long-pending question of the Mall to Charing Cross improvement in relation to the Admiralty Arch has been settled, the London County Council having agreed to a recommendation of its Improvement Committee that the approach to the Arch should be of a minimum width of 90 feet, and that the architectural treatment of the buildings at the entrance should be worthy of the position. It will be remembered that a conference of representatives of H.M. Office of Works, the London County Council, and the Westminster City Council was arranged to inaugurate a joint scheme for the improvement, the President of the Royal Institute representing the Office of Works with Lord Plymouth and Mr. Lionel Earle. The Improvements Committee in their Report mention that "various proposals for the completion of the improvement were prepared and considered by the Joint Committee, who state that in their deliberations they have been greatly assisted by the experience and advice of Mr. Reginald Blomfield, A.R.A., President of the Royal Institute of British Architects, one of the members of the Joint Committee." The scheme involves (1) the acquisition of the site of No. 56 Charing Cross and parts of No. 55 Charing Cross, and No. 17 Spring Gardens (Liverpool and London and Globe Insurance Company); (2) the acquisition of No. 57 Charing Cross and No. 15 Spring

Gardens (Phoenix Insurance Company); (3) the acquisition of Nos. 58 and 59 Charing Cross (Messrs. Anderson's premises) and the premises in the rear (Nos. 11 and 13 Spring Gardens). Parliamentary authority will have to be obtained for the compulsory acquisition of such interests (if any) as cannot be acquired by agreement. The cost of the scheme is estimated at £115,000, and the Government, the County Council, and the Westminster City Council will each contribute a third. The Improvements Committee expressed their full agreement with the Joint Committee as to the merits of the scheme suggested, which will, they consider, provide a dignified approach to the Admiralty Arch and at the same time secure for the adjoining buildings architectural treatment worthy of the exceptional position which they occupy.

Designs of New Government Buildings.

On the Public Buildings Expenses Bill coming up for consideration on report in the House of Commons recently, Mr. Bennett-Goldney moved an amendment in favour of throwing open to public competition the designs for the proposed new buildings that are not completions to existing blocks and leaving the choice of the selected designs to the First Commissioner, with the assistance of a body of persons equally competent to adjudicate upon architectural questions of the kind, the architectural staff in the Office of Works being permitted to compete. He said it was proposed to spend £145,000 of public money upon public buildings, but no vestige of any design had been presented either to the House or to the Department which was responsible for the spending of the money. The time had come when they ought to insist upon the designs of great public buildings being thrown open to competition. He believed if the First Commissioner of Works would only combine with the Royal Institute of British Architects and the Royal Academy he would easily be able to bring together a body of men to adjudicate fairly and squarely between the different designs.

Mr. Wedgwood Benn said the proposed buildings were not very big or expensive, and although it was the practice of the Office of Works to throw open to competition large and important buildings, they also retained a staff of architects for the purpose of designing and carrying out smaller buildings of this kind.

The amendment was rejected by 254 votes to 90.

Mr. Bennett-Goldney on a subsequent occasion asked Mr. Wedgwood Benn if he would ascertain how many public buildings costing more than £15,000 had been designed by the permanent staff of the Office of Works since 1906, including only such buildings as had been built, were under construction, or had been sanctioned by the Govern-

ment to be constructed, and if he would give a list of these buildings.

Mr. Wedgwood Benn said he would send the honourable member a list of fifty-three buildings. In further reply he stated that the total number of architects of all grades on the establishment of the Office of Works was sixty-one. Of these three were Fellows, twenty-four Associates, and four Licentiates of the Royal Institute of British Architects. The three Fellows attained their rank in 1891, 1906, and 1912 respectively.

St. Peter's Square, Hammersmith.

The Secretary of the London Society writes:—"It is with the greatest satisfaction that the London Society learns that the Hammersmith Borough Council have at length decided to agree to the acquisition of St. Peter's Square. On behalf of the Society, I should like to thank all those members of the Press who in answer to our urgent appeal gave the matter such widespread and constant publicity. There is no doubt that but for their action the Square would have been entirely blotted out, and the result is a clear proof of the power of collective action which the London Society persistently advocates."

Ancient Monuments Preservation.

On the third reading in the House of Lords of the Ancient Monuments Consolidation and Amendment Bill, the following was adopted as the definition in Clause 22:—

"The expression 'ancient monument' includes any monument specified in the Schedule to the Ancient Monuments Protection Act, 1882, and any other monuments or things which in the opinion of the Commissioners of Works are of a like character, and any monument the preservation of which is a matter of public interest by reason of the historic, architectural, traditional, artistic, or archaeological interest attaching thereto, or any part thereof or any remains thereof, and the site of any such monument or of any remains thereof; and any part of the adjoining land which may be required for the purpose of fencing, covering in, or otherwise preserving the monument from injury, and also includes the means of access thereto."

The Bill passed the Commons without any amendment of importance and has received the Royal Assent. The provisions of the measure have already been drawn attention to in these pages by Mr. W. J. Davies [*A.*],—see JOURNAL 10th May and 14th June. The Act marks a great advance on any previous legislation on the subject in this country. For the first time means are provided of arresting the threatened destruction or removal of an "ancient monument" within the purview of the Act. There will be no reason in the future why such a building as Tattershall Castle, for instance, should be despoiled if the First Commissioner of Works, with whom rests the power of putting the law in motion, acts with energy and promptitude. A simple order of the Commissioner's will make any injury of such a place an

offence; time will then be given for deliberation on the future of the building, and its fate will in the last resort be determined by Parliament.

Preservation of Ancient Churches: A Committee on Protection.

In view of the recent discussion in the House of Lords upon the Bill for the Protection of Ancient Monuments, and of the report of the Select Committee on the same subject issued a few months ago, the Archbishops of Canterbury and York are desirous to ascertain what steps are taken, on the issue of faculties in the different dioceses, to secure due protection, on both archaeological and artistic grounds, for church fabrics which have to undergo repair or in which changes are being made. A committee has therefore been formed to undertake this inquiry and to report to the Archbishops the information acquired, together with any recommendations which the facts collected may suggest to the Committee. It consists of Sir Lewis Dibdin, D.C.L., Dean of the Arches; Sir Alfred Kempe, D.C.L., F.R.S., Chancellor of the Diocese of London, and of the Dioceses of St. Albans, Southwell, Peterborough, and Chichester; and Sir Charles E. H. Chadwyck-Healey, K.C.B., K.C., Chancellor of the Diocese of Exeter and formerly also Chancellor of the Dioceses of Salisbury and Bath and Wells; with Mr. E. V. Oliver, Ecclesiastical Commission, Millbank, Westminster, as Secretary.

Christchurch Priory: The Fallacies of Restoration.

The Times of the 26th inst. published a letter from Lord Ferrers, Hon. Secretary of the Society for the Protection of Ancient Buildings, calling attention to the danger which threatens the beautiful Lady Chapel of the Priory Church at Christchurch.

Not the least beautiful part of the church (writes Lord Ferrers) is the Lady Chapel. Eastward of the screen, behind the choir, the church ends in a work of three vaulted compartments, of which the first serves as ambulatory and the other two constitute the Lady Chapel. The first half of the chapel has tracery of what might be windows filled in blank; and the reason of this is obvious outside, for the space is delightfully half-smothered by extensions of the aisles. The second half is gloriously lighted north and east and south by three great windows of early Perpendicular tracery. The north and south windows are clear, but the east window is filled with nineteenth century coloured glass. Apart from this glass there is little to disturb the serenity of the interior, and the eye is soon caught and held by a canopied reredos, broken, alas! but so exquisite that its first perfection could hardly be imagined more beautiful. This chapel has been a delight for 500 years and might well remain so for another 500. But at this moment it is in danger of being killed by kindness. The vicar and churchwardens have accepted a bequest of the value of £5,000 to "restore" the Lady Chapel. The chapel is structurally sound and only measures about 36 feet by 21 feet. It is a small chapel, and it is a large sum. The interest on a tithe of it should keep the building in repair to all time. How will the capital be spent? The coloured glass might (if it could

be arranged) be replaced by clear at no great cost, and a pound or two might be spent on repairs to the tomb south of the altar. After that the money becomes dangerous. Fifty years ago it would no doubt have been used to "restore" the reredos. Christchurch may be backward in reverence for old work, but it is to be hoped that at least an atrocity such as this is impossible. And yet the trustees have accepted the bequest. Like a child offered a rich cake, they will be tempted to go through with it. And there is no practical use to which all this money can be put. It can only be spent to import ornamental modernisms. If it is spent, at the best it will be worse than wasted; at the worst, priceless beauty will be sacrificed for the trappings of an ecclesiastical furniture shop.

Lord Ferrers asks that the public be put on the alert to insist that only so much money should be spent as can be shown to be for the real advantage of the Lady Chapel.

The Times of the same date in a leader headed "Fallacies of Restoration" says:—

"Restoration" is a word that every lover of old buildings writes with inverted commas because, though it looks innocent enough, it has been used to cover a multitude of sins. It may mean merely the necessary repair of the decay caused by time; and it may mean what has happened in Durham, Salisbury, Worcester, and many other Cathedrals. Now a very small sum, as Lord Ferrers points out, would pay for all repairs needed in this little Lady Chapel. But if the vicar and churchwardens spend only that small sum, what will they do with the rest of their bequest? The danger is that they will feel bound, having accepted it, to spend it all; and in that case they can, unfortunately, find plenty of mischief to do. There is, for instance, the reredos damaged, but still most beautiful. That might have its niches filled with statues of the kind we all know too well. Then behind the chapel there are three fine windows, one already filled with modern glass. It would be well, as Lord Ferrers says, to put plain glass in this one window; but that would cost very little. The danger is that money will be spent on more stained glass and on other decorations which are pretty sure to spoil the beauties they are meant to enhance.

Now it is true that the windows were meant to contain stained glass and the reredos niches to contain statues; and it is possible, no doubt, to produce good stained glass now and good statues. But the better the glass and the better the statues, the less are they fitted for the windows and niches of the Middle Ages. William Morris soon discovered this; and, as soon as he discovered it, he refused to put his glass in old windows. Others have discovered it too; but too many of them, instead of trying to produce works of art for the buildings of their own time, have endeavoured by diligent imitation to make their work congruous with the buildings of the Middle Ages, and in aiming at this congruity they have missed everything else. There are instances of works of art that have also been closely imitative, as, for instance, the sculpture of Bastianini, but they are very rare. Nearly always close imitation prevents any kind of expression and only satisfies those who see no difference between real art and sham. And yet there is still a persistent belief that where, in our Gothic churches, we have lost the reality, we ought, if we can afford it, to supply an imitation. The other day, for instance, Mr. Olaf Carøe, writing about the windows in Winchester College Chapel, used these words:—"Specimens of the old glass exist as a fact, and as we must, unfortunately, have copies, let us have good copies, not plagiarisms." But why must we have copies? A stained glass window, since it is a decoration, not a structural necessity, is a work of art or nothing; and a copy of a work of art is not the same thing as a work of art. Mr. Carøe says it can be exact; but if it can, then the original

is not a work of art; and, as a matter of fact, these modern imitations are very seldom copies of particular works of art. They are imitations of a style, and of one in which the imitator would not naturally express himself. He has to invent, yet under conditions which make invention impossible; and what he produces, therefore, is an imitation of invention, an artificial flower which is not even a copy of a real one.

The worst of this sham art is that, besides spoiling the real art of the past, it also hinders the production of real art in the present. Architects trained in restoration, when they have to design a new work, proceed as if they were still restoring; and sculptors and glass painters follow suit. Indeed, the public is so inured to restored Gothic that it has learnt to like sham Gothic better than real architecture in any other style. Gothic is commonly supposed to be the religious style of architecture; though nothing can be less religious than sham art of any kind, for no one would produce it if he were not paid for it. In the prime of Gothic religion found an expression for itself in architecture and all the subsidiary arts; but that expression was peculiar to its own time, as artistic expression always is. It came to an end when there was a change in the minds of men, and our minds are still further changed. Our business now, when we build churches, is to find our own artistic expression of our religion; and that, difficult anyhow, will remain impossible so long as we imitate an expression of the past. The old buildings satisfy us just because they are expressive, and not at all because they happen to be Gothic in style. But whenever we make our own imitative additions to them we lessen their power of expression and our own power of enjoyment.

Town-Planning Schemes: Local Government Board's Report.

The Local Government Board have issued the first part of their Annual Report for 1912-13 as a Blue-book [Cd. 6981]. The report is divided into three sections, and the issue of the Housing Section for the first time as a separate volume recognises the prominent position which housing takes among social questions.

As to town planning, the Report states that both landowners and local authorities are alive to the advantages which system is likely to secure in laying out land for building, and that town planning will be a source of large ultimate saving to the community in many directions. So far the schemes presented to the Board have been chiefly concerned with laying out main routes of communication through and from the areas dealt with; with the provision of open spaces; with the limitation of the number of houses to be erected on a particular area; with the setting back of the building lines so as to secure abundant air space and to enable roads to be widened hereafter at a minimum cost should circumstances render it necessary; with the restriction of factories and similar buildings to particular areas, and with the setting aside of particular sites for public purposes. Up to the end of March 1913, the Board had authorised the preparation or adoption of 33 schemes by 27 local authorities, involving a total area of more than 50,000 acres, or over 78 square miles. Four complete schemes have been submitted to the Board. Two were prepared by the Corporation of Birmingham; one by the Corporation of Rochdale,

and the other by the Urban District Council of Ruislip-Northwood. In the Birmingham scheme no attempt was made to regulate or control to any great extent the architectural features of the buildings to be erected. The Ruislip-Northwood scheme (which relates to 5,906 acres), on the other hand, contains architectural provisions. Among the schemes the preparation of which was authorised by the Board in the year 1912-13 may be noted one of 1,044 acres in Finchley, one of 4,266 acres in the borough and rural district of Luton, one of 1,860 acres in the urban districts of Twickenham, Heston, and Isleworth, and one of 1,530 acres in Walthamstow. In addition, 11 local authorities have applied for authority to prepare schemes involving some 20,000 acres, and the Board have information that some 111 others, many of them in the Greater London area, are considering the question of preparing town planning schemes.

Formation of an International Garden City and Town Planning Association.

At a conference recently held under the auspices of the Garden City Association, and attended by delegates from all over the world, it was decided to form an International Garden City and Town Planning Association, support having been given to this project by the various associations in this country. A Committee has been elected to make the necessary arrangements, Mr. Ebenezer Howard being elected the first President. Offices have been taken at No. 3 Gray's Inn Place, where meetings of the Committee will be held during the coming week. It is expected that the first International Congress will take place at Letchworth next year during the month of August. The new association will deal with everything in any way relating to town planning and garden suburbs in the widest sense.

M. Rodin's "Burghers of Calais."

A site for M. Auguste Rodin's sculpture, "The Burghers of Calais," has been selected in the Victoria Tower Garden, Westminster. The garden, which adjoins the Houses of Parliament on the Millbank side, is at present an acre in extent, and has a short walk along the side of the Thames. But the old houses and wharves which once stood between it and Lambeth Bridge have been pulled down, and the cleared area, bounded by an embankment wall on the river side, is being laid out as an addition to the garden. The extension, which is about 300 yards long, with an average width of 50 yards, will carry the garden up to the bridge, and thus allow of a clear view of the south wing of the Houses of Parliament from Millbank. The Victoria Tower Garden is under the control of the Office of Works. The "Burghers of Calais" was acquired for the nation by the National Arts Collections Fund. It is not a copy of the group at Calais, but is an original specimen of M. Rodin's work in bronze. The sculptor, during a recent

visit to London, was shown the selected site in the existing garden, and was greatly pleased with it.

Architectural Scholarship, British School at Rome: Second Year.

The Conditions of the second year's Scheme of Competition for the Scholarship in Architecture at the British School at Rome, offered by the Commissioners for the Exhibition of 1851, are as follows:—

The Scholarship will be of the value of £200 per annum, and will be ordinarily tenable for three years. Candidates must be British subjects, and less than thirty years of age on 1st July, 1914.

The Competition, which will be conducted by the Faculty of Architecture of the British School at Rome, will be in two stages:—

A. An Open Examination.

B. A Final Competition, open to not more than ten candidates selected from those competing in the Open Examination.

A. THE OPEN EXAMINATION.

Competitors should notify the Honorary General Secretary, British School at Rome, 54 Victoria Street, London, S.W., of their intention to compete in this Examination as early as possible, and in any case not later than the 24th January, 1914, and with such notification must enclose a certificate of birth or a declaration as to age and nationality, duly attested by two responsible persons.

The subject for this Examination will be AN ART GALLERY, situated in the public park of an important provincial town.

The building to have a frontage towards the south of 250 feet (on which frontage is to be the principal entrance), with a depth of 100 feet, and to consist, on the ground floor, of a central top-lighted Hall for Sculpture, with side-lighted galleries around it. The first floor to have top-lighted galleries. A lower floor for reserve exhibits and stores may be provided, and the design may include any terrace, steps, and architectural adjuncts thought necessary for the completion of the design.

The size given may be exclusive of any architectural projections, such as porticoes or other architectural features.

The drawings required are:—

Plans of the two principal floors,

Front and side elevations,

Longitudinal and transverse sections—all to a scale of $\frac{1}{4}$ inch to a foot.

A detail of an important portion of the front to $\frac{1}{4}$ -inch scale.

A perspective in which the building shall measure 18 inches.

A short descriptive report must accompany the design.

The general drawings may be finished in ink or pencil, and the view in any manner at the competitor's discretion.

Each design must bear a motto, and must be accompanied by an envelope enclosing the name of the competitor.

Drawings must not be executed as part of a school course, and the competitor must submit a written statement to the effect that this regulation has been complied with, together with a declaration that the work has been done by his own hand.

The drawings, together with the above-mentioned documents, must be sent to the Honorary General Secretary, British School at Rome, c/o The Secretary, Royal Institute of British Architects, 9 Conduit Street, W., and must reach him on or before 31st January, 1914.

B. THE FINAL COMPETITION.

This Competition will be held "en loge" in London, and particulars regarding it will be announced hereafter.

The successful candidate in this Competition will be recommended for appointment to the Commissioners' Scholarship.

GENERAL.

The Faculty reserve to themselves the right, at their absolute discretion, to alter any of the conditions, periods, dates or times herein specified, and to decline to hold the Final Competition, or to select any candidate for it, or to make any recommendation for the Scholarship.

The Faculty also reserve to themselves the right to publish photographic reproductions of, or to exhibit, any of the works submitted by competitors.

Copies of the conditions may be obtained from the Hon. General Secretary, Mr. Evelyn Shaw, Office of the British School at Rome, 54 Victoria Street, S.W.

School of Architectural Studies, University of Cambridge.

In connection with the School of Architectural Studies which has been established in the University of Cambridge, a new schedule for the Examination in Architectural Studies has just been passed which covers the whole range, both theoretical and historical, of architecture. The intention has been to make the course available for students coming up to the University who propose to become architects and desire to devote some of their time to professional studies. There are courses on Elementary Mechanics, Practical Mathematics, and Theory of Structure, given at the Engineering School of the University, and instruction in Architectural Drawing, Surveying, and Elementary Design, undertaken by Mr. E. S. Prior [F.], Slade Professor of Fine Art, with the assistance of Mr. J. M. Dawson [A.], in the Drawing School, where also drawings as Testimonies of Study for the R.I.B.A. Intermediate Examination can be prepared. The courses on the General History of Art, History of Architecture, both general and of special periods, and on the Theory of Art in relation to architecture, are given by the Slade Professor, the Disney Professor of Archaeology, the University Reader in Classical Archaeology, and other lecturers. Candidates who intend to sit for the R.I.B.A. Intermediate Examination are entitled to certain exemptions on producing a certificate of having passed the two parts of the Examination in Architectural Studies. The course of study is so arranged as to fit in with a large number of other courses such as are required for obtaining the B.A. degree. The possible combination, with the best arrangements of time and studies, as well as a detailed syllabus of the Examination, can be obtained from the Secretary to the Board of Architectural Studies, Gonville and Caius College, Cambridge.

University of Sheffield: Degree Course in Architecture.

At a meeting of the Court held on 27th June, certain important modifications in the arrangements for the teaching of Architecture in Sheffield

University received final approval. The Department of Architecture, which has been for the last six years in the Faculty of Applied Science, is now transferred to the Faculty of Arts, and in addition to the three years' course leading to the Certificate in Architecture, and the five years' course leading to the Diploma, the Department now provides a five years' course leading to the Degree of Bachelor of Arts with Honours in Architecture. Before commencing the course for this Degree, candidates must pass, or obtain exemption from, the Matriculation Examination of the Joint Matriculation Board of the Northern Universities.

During the first year of the Degree Course, students prepare for a special Intermediate Examination in the following subjects: (1) Latin; (2) English, French, German, or Greek; (3) Ancient, Mediæval, or Modern History; (4) History of Architecture; (5) Mathematics (Pure or Pure and Applied). Thus, in addition to the subject History of Architecture, candidates for the Degree must satisfy the examiners in four subjects in the Intermediate Examination in Arts. This is one of the highest standards of non-technical education required in an English School of Architecture.

During the second and third years the candidates prepare for the first part of the Degree Examination, the subjects of which are (1) History of Architecture, (2) Ancient Art, (3) Applied Construction including Sanitation, (4) Theoretical Construction and Laboratory Course in Mechanics, (5) Materials of Construction, including the Chemistry and Testing of Materials, and (6) Geometry and Perspective.

The second part of the Degree Examination is held at the end of the fifth year, papers being set in (1) Applied Construction, (2) Theoretical Construction, (3) Materials of Construction, (4) Sanitation, (5) Specifications, Estimating, and Professional Practice, (6) Design, (7) Principles of Architecture.

Measured Drawings, Designs, and Drawings of Construction prepared during the course must be submitted and approved at each part of the Examination.

During the first three years candidates for the Degree work full time at the University, but during the last two years most of their day-time must be spent in the office of an architect. The course is thus intended to supplement, rather than to take the place of, office training.

Important points in this Degree Course are:—

(1) The high standard required in non-technical subjects; (2) The careful study required, not only in the History of Architecture and Design, but also in such subjects as Applied and Theoretical Construction, Materials, Sanitation, &c.; (3) Candidates must produce evidence of practical training in the office of an architect; (4) Candidates must attend a certain number of Vacation Courses, and

thus spend from eight to twenty-two weeks in the study of buildings of architectural interest.

Students who have not passed the Matriculation Examination may take the Certificate and Diploma Courses, but will be required to show that they are qualified to benefit from them. Students who are unable to take a complete course may, by arrangement, take any part or parts approved by the Lecturer.

Further particulars may be obtained from the Lecturer, Mr. W. S. Purchon [A.].

Aberdeen School of Architecture.

On the results of the past three years' work the first "Diploma" of the Aberdeen School of Architecture has recently been awarded to Mr. Morrison Hendry, on the recommendation of Mr. H. V. Lanchester [F.], the assessor appointed by the Scotch Education Department to visit the school. Day classes in architecture came into existence in Aberdeen three years ago, when Mr. Harold Hughes [A.] was appointed to the school and students were enabled to receive instruction in preparation for the "Diploma." Of late, with the co-operation of the Aberdeen Society of Architects, a scheme has been drawn up whereby students will spend their first two years at the school, followed by three years in an architect's office, continuing, during this latter period, their school work in evening classes. The syllabus for the course has been provisionally approved by the Board of Architectural Education, and work under this new arrangement began at the opening of the session on 27th August.

Timber: Course of Lectures for Architects.

Professor Percy Groom, D.Sc., F.L.S., will give during the forthcoming Session at the Royal College of Science a course of nine or ten lectures and demonstrations on Timber for Engineers and Architects. The lectures will deal with the structure, identification, and physical properties (strength, elasticity, weight, colour, durability, &c.) of timber commonly used for engineering purposes (in houses, in mines, on railways, for paving-blocks, &c.) in Europe; structural characters determining the qualities of these; defects in timbers; their identification and their effects on the various physical properties of wood; methods of improving the qualities of various timbers (including "impregnation," &c.). The lectures will be delivered on Tuesdays and Thursdays, from 2 to 3 p.m., beginning Thursday, 9th October next, and laboratory work from 3 to 4 p.m. on the same days. The fee for the course is £1.

Architectural Lectures at London University.

Mr. A. E. Richardson, Licentiate R.I.B.A., has been appointed Carpenters' Company Lecturer in the School of Architecture of London University for the forthcoming session. The subject of his course

will be "The Work of the English Architects of the Eighteenth Century, and of the Greek Revivalists of the first half of the Nineteenth Century." He will deliver ten public lectures on Thursdays, at 6 P.M., beginning 16th October.

Council Appointments to Standing Committees.

The following appointments to the four Standing Committees have been made by the Council under By-law 51:—

ART.—Walter Cave [F.]; T. Raffles Davison [H.A.]; H. P. Burke Downing [F.]; C. Wontner Smith [F.]; Percy W. Lovell [A.].

LITERATURE.—Arthur T. Bolton [F.]; J. D. Crace, F.S.A. [H.A.]; E. A. Rickards [F.]; Herbert Wigglesworth [F.]; John S. Lee [A.].

PRACTICE.—E. J. Gosling [F.]; Albert W. Moore [F.]; H. A. Satchell [F.]; Septimus Warwick [F.]; H. A. Saul [A.].

SCIENCE.—R. Stephen Ayling [F.]; Professor W. C. Unwin, F.R.S., M.Inst.C.E. [H.A.]; A. T. Walmisley, M.Inst.C.E. [H.A.]; H. W. Burrows, F.G.S. [A.]; E. Stanley Hall, M.A. Oxon. [A.].

Officers of Standing Committees.

The Standing Committees for the new Session have elected their officers as follows:—

ART.—E. Guy Dawber, *Chairman*; H. Heathcote Statham, *Vice-Chairman*; Percy W. Lovell and W. A. Forsyth, *Hon. Secretaries*.

LITERATURE.—W. Henry Ward, *Chairman*; C. E. Sayer, *Vice-Chairman*; C. Harrison Townsend and W. G. Newton, *Hon. Secretaries*.

PRACTICE.—Wm. Woodward, *Chairman*; Max Clarke, *Vice-Chairman*; H. A. Satchell and Matt. Garbutt, *Hon. Secretaries*.

SCIENCE.—F. R. Farrow, *Chairman*; Digby L. Solomon, *Vice-Chairman*; George Hornblower and G. Leonard Elkington, *Hon. Secretaries*.

OBITUARY.

William Clement Williams, *Fellow*, elected 1890, died at his residence at Port Erin, Isle of Man, on the 3rd June. Mr. Williams was articled in 1866 to Mr. Edwin Dalby, ecclesiastical architect, of Abingdon, Wantage, and Bideford. In 1869 he entered the office of Messrs. Horsfall, Wandle & Patchett, of Halifax, as chief assistant; and in 1872 joined Mr. Horsfall as partner. The firm had a large and varied practice, and were responsible for a number of school buildings, shops and business premises, mills and factories, and residential buildings in Halifax and the vicinity. Mr. Williams' design submitted in a limited competition for the Halifax Infirmary was placed second, and was highly commended by the late Mr. Alfred Waterhouse, R.A., the Assessor.

Georgé H. Bibby, whose death took place some few weeks ago at Twickenham, in his sixty-ninth year, was until recently a *Fellow* of the Institute. He served his articles with the late

Mr. G. Fowler Jones [F.], of York, whose work was chiefly in connection with churches and asylums, and subsequently held various engagements in Birmingham, Bolton, &c., and also in Manchester, where he practised for many years. The claims of a large family led later to his seeking and securing a more certain source of income with the London County Council, in whose employ he continued till failing health compelled his retirement. Besides being a frequent contributor to the building journals, Mr. Bibby was the author in book form of *Asylum Construction and Arrangement* (two editions, Drake, Driver & Leaver, Limited); *Planning of Lunatic Asylums, Housing of Pauper Lunatics, Planning of Workhouses, &c.* (B. T. Batsford.) ROBERT F. HODGES [A.].

COMPETITIONS.

Tendering Cottage Homes.

The Competitions Committee of the Royal Institute desire it to be known that the conditions of this Competition are not satisfactory and are the subject of correspondence between the Committee and the promoters.

LEGAL.

What is White Lead?

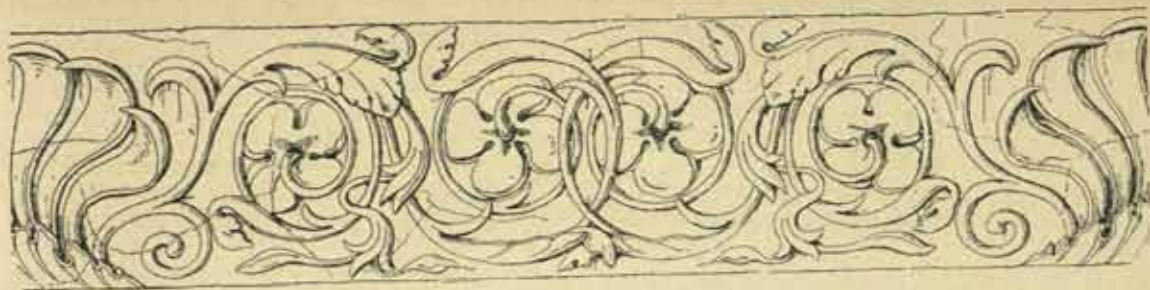
In the King's Bench Division, on the 8th July, before Mr. Justice Avory, a settlement was announced in the case of Thomas Raban and Son, of Baldock, Herts., v. Thomas Merry and Co. Ltd., of Suffolk Street, Birmingham. The action was brought with the object of establishing a clear definition of the term "white lead" to prevent confusion with other materials of a similar character.

Mr. C. C. Hutchinson, K.C., and Mr. G. C. Hutchinson, instructed by Messrs. White and Leonard, appeared for the Plaintiffs. Mr. T. Terrell, K.C., and Mr. Maddocks, instructed by Messrs. Jaques and Co., for the defendants.

Counsel for the Plaintiffs said that the parties had come to terms, and it was desired to submit the terms of settlement, which were as follows:—

The Defendants admit that, as alleged in the statement of claim, on a sale of goods by and under the description of white lead, it is a condition to be implied according to the usage and custom of the trade that the substance to be sold and delivered should be the substance commonly known as white lead, otherwise hydrated oxy-carbonate of lead, and also admit that they supplied to the Plaintiffs a pigment which was of a different description and composition, being composed not of hydrated oxy-carbonate of lead, but of sulphate of lead. The Plaintiffs admit that the Defendants did not make any representations intentionally or fraudulently so as to induce the Plaintiffs to enter the said contract. And Plaintiffs and Defendants in consideration of the respective admissions have mutually agreed to settle the said action. The Defendants undertake that at all times hereafter they will not offer for sale, or sell and deliver in the course of their business, any substance or pigment under the name of "white lead," other than the substance or pigment commonly known as white lead—viz., hydrated oxy-carbonate of lead.

Counsel for the Defendants agreed to these terms.



RECENT DEVELOPMENTS AFFECTING SCHOOL BUILDING.

By PERCY MORRIS [A.], Cates Prizeman 1897, Architect to the Devon County Education Committee.

(Continued from page 672.)

The *Derbyshire Schools* are of several forms, shown by figs. 14-19 inclusive. In addition to cross ventilation a point is made of bi-lateral lighting in several of the rooms. Figs. 16 and 17 were planned to allow of three classrooms being built in the first instance, with a view to subsequent extension of the school. Figs. 18 and 19 show a further development, a feature being the cross ventilation of the cloakrooms. The aspect of the rooms is not shown, but it is claimed that each room obtains sunlight during some part of the day.

The *External Corridor Type* is shown in fig. 20 (built in 1909). Fig. 21 is an example of the same type of building, with a hall designed for use also as a playroom, an isolated and cross ventilated cloakroom, and a corridor which may be used, as I have indicated, as a reservoir of fresh air for ventilating purposes under special circumstances. The site is largely answerable for the shape of the plan. Fig. 22, a three-story building, also has an independent hall and shallow classrooms.

The *Central Corridor Type* is one of which several examples have recently appeared, but unless carefully used it is likely to lead to an undesirable development. In its best form it is reasonably satisfactory, and on a narrow or hilly site it is the most economical type for a large department. This fact makes it necessary to adopt it sometimes, although it is impossible to be enthusiastic about it. By keeping the corridor ceiling down clerestory lights are obtained above the flat roof to provide cross ventilation; these give also some amount of sunlight to rooms facing north. The principle is being largely applied in re-modelling old schools, and presents in some instances about the only possible solution of the problem upon the newer lines. I should like to see a rule made confining its use to one-story buildings—or, if used for a two-story building, that the classrooms must be placed on the upper floor only; and in both cases on condition that the ends of the corridor are kept free for windows so that this can be air-flushed for its entire length. Directly it is applied to classrooms on two floors of a building, or the corridor is intercepted by a lateral hall, it fails in my opinion in achieving its object. Closed ends must inevitably interfere with natural ventilation.

Fig. 23 shows an example of the central corridor type placed first in a recent competition,* and designed for a difficult site about 110 feet wide, where the shape of the playground required careful consideration. Fig. 24 is a plan of a school we have in hand at the present time. The site slopes 1 in 3, and was as favourable a one as was to be had in the neighbourhood. The building must be as economical as possible, and this points to a narrow and compact plan. The width of the frontage does not admit of a single line of classrooms, the basement must there-

* See note at end of paper, p. 706.

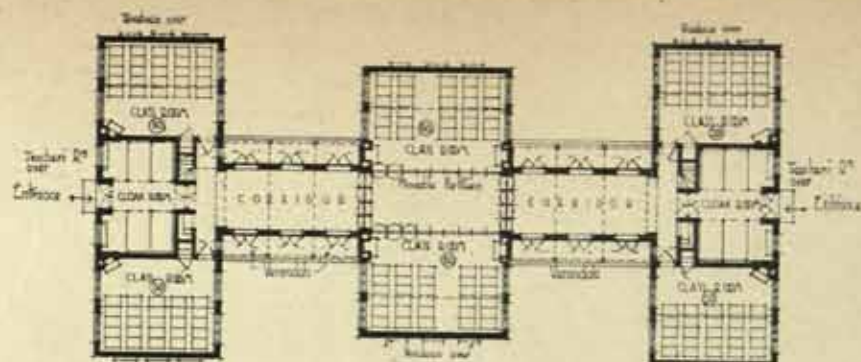
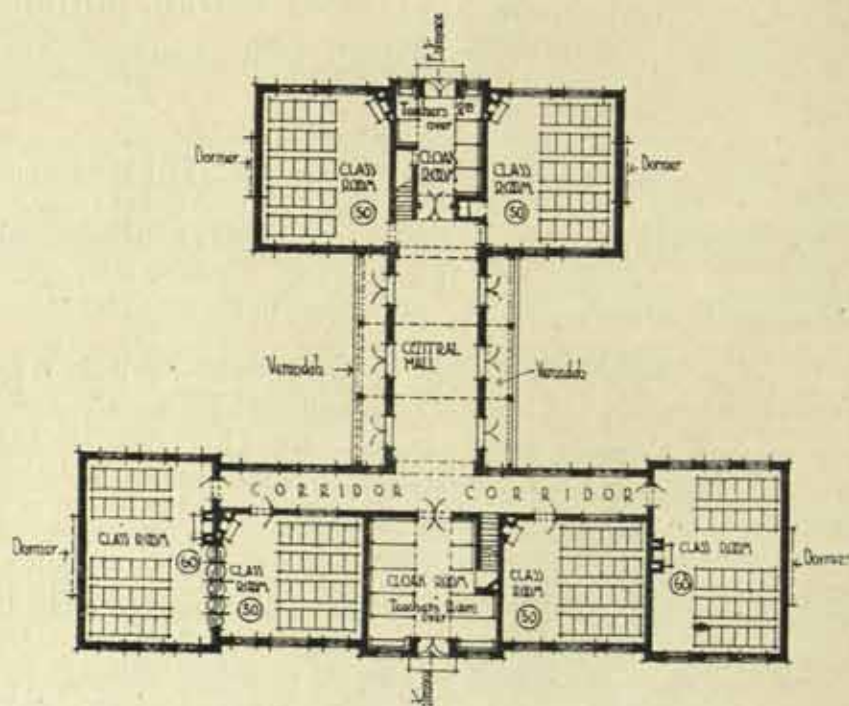
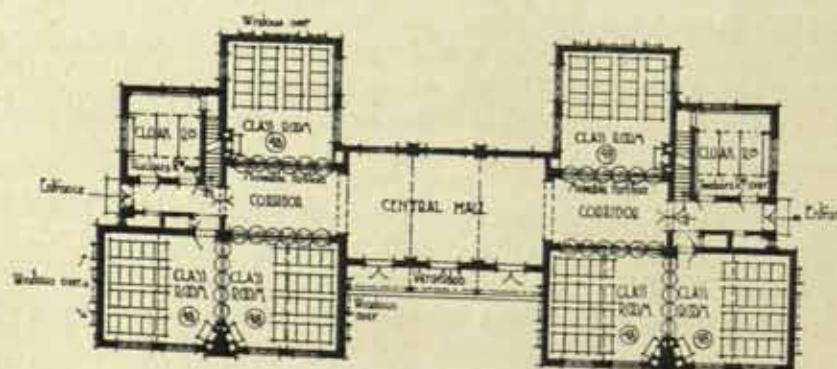


FIG. 14. GROUND FLOOR PLAN



: GROUND FLOOR PLAN :

FIG. 15.



: GROUND FLOOR PLAN :

FIG. 16.

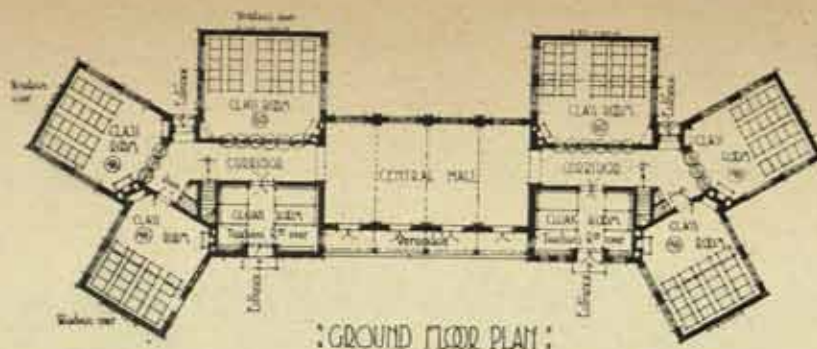


FIG. 17.

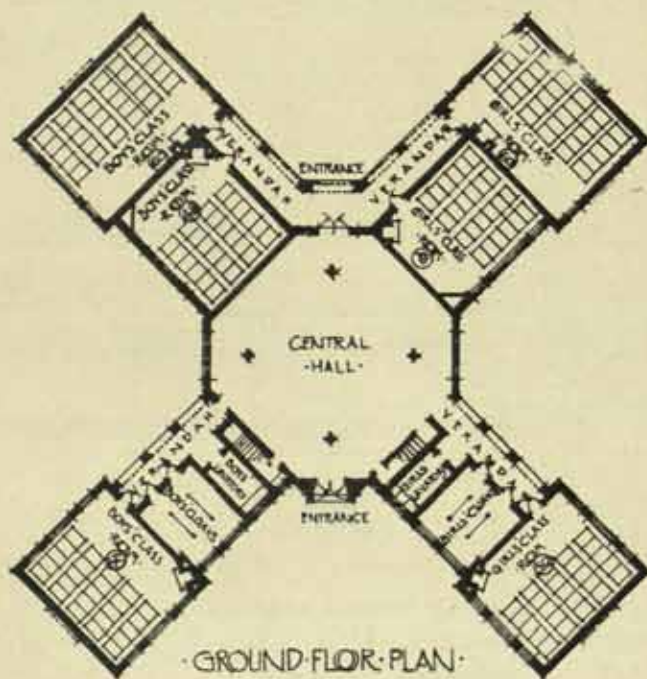


FIG. 18.

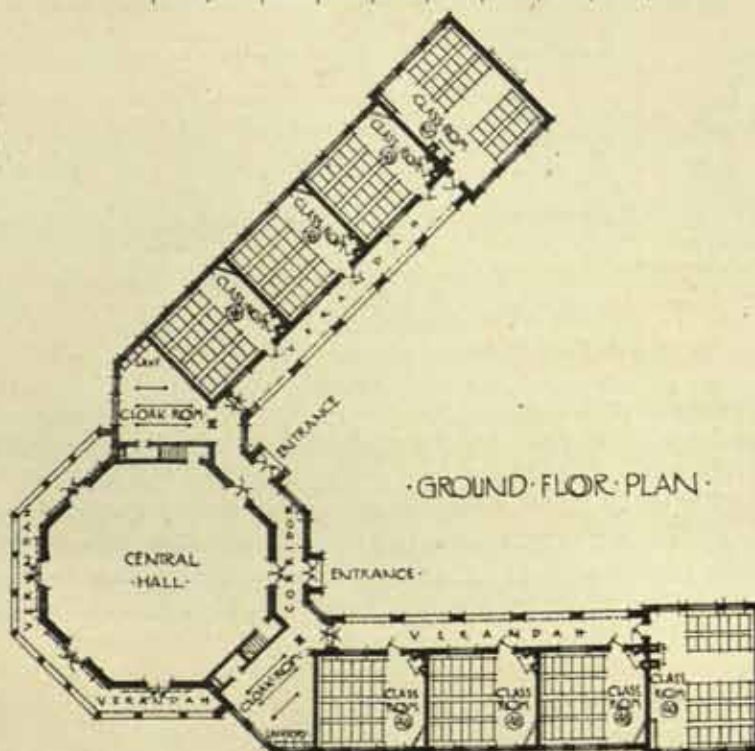


FIG. 19.

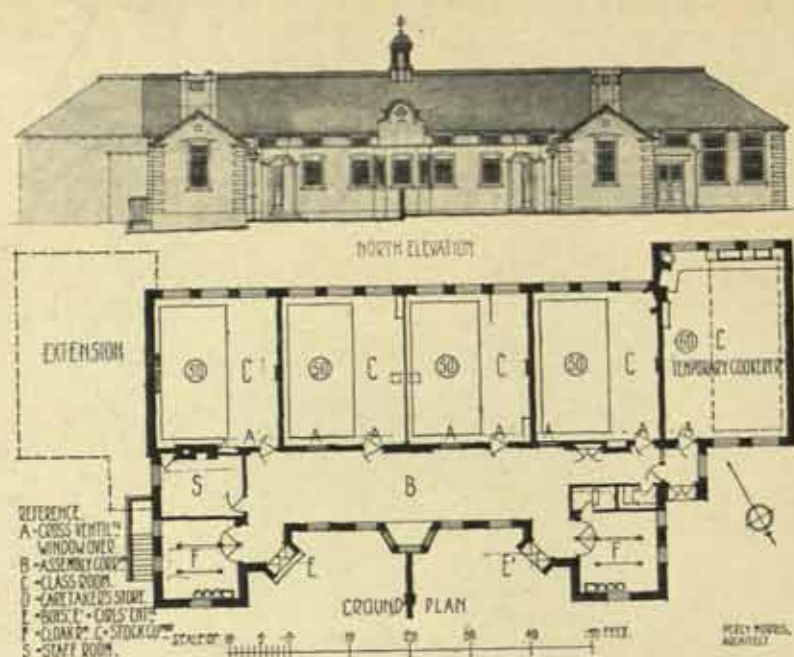


FIG. 20.—A ONE-STORY MIXED SCHOOL FOR 200 CHILDREN.

fore be utilised, and for cross ventilating purposes the ends of the basement story must be kept open. The classrooms have been put on the ground floor on both sides of a corridor, the ends of which are free. The staircase is a double one so as to keep it as clear as possible for children approaching in two directions; one would have preferred a staircase at each end of the corridor,

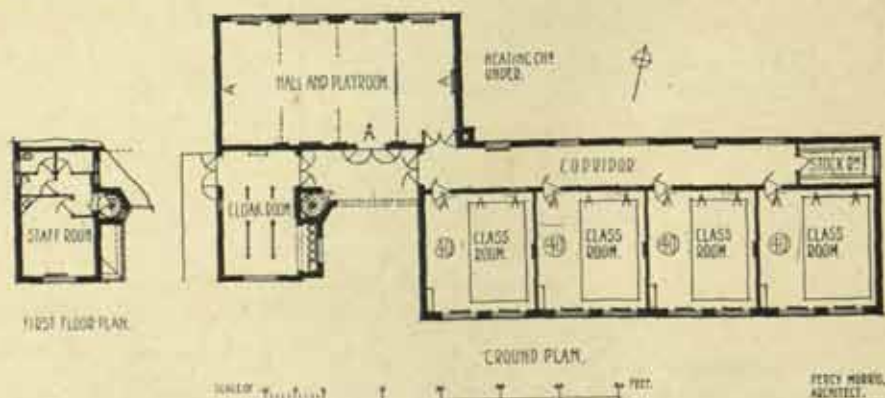


FIG. 21.—A ONE-STORY JUNIOR SCHOOL FOR 100 BOYS.

but they would obstruct ventilation as previously noted, and necessitate a dark and badly ventilated basement corridor. The central position has at least the advantage that the staircase windows provide an additional lung to the corridor. The hall and handicraft room have cross ventilation of a kind, and the former serves also as a playroom accessible from the playground. The cloakrooms are disconnected from the school, and placed near the entrances which will most frequently be used; their central position is determined by the staircases. The excavated material will be used for providing a level playground, and an embankment protected by a fence will be formed to save the expense of retaining walls.

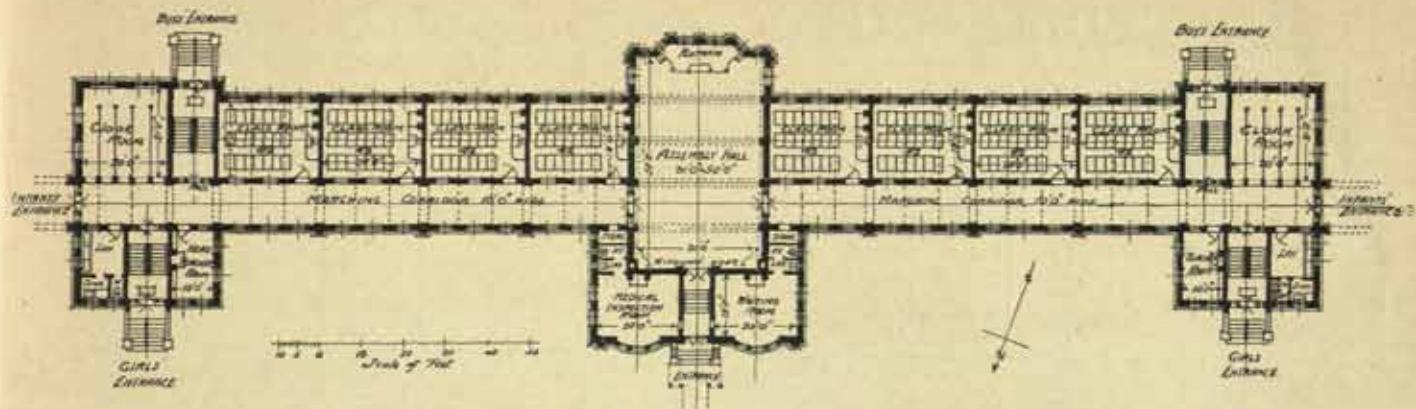
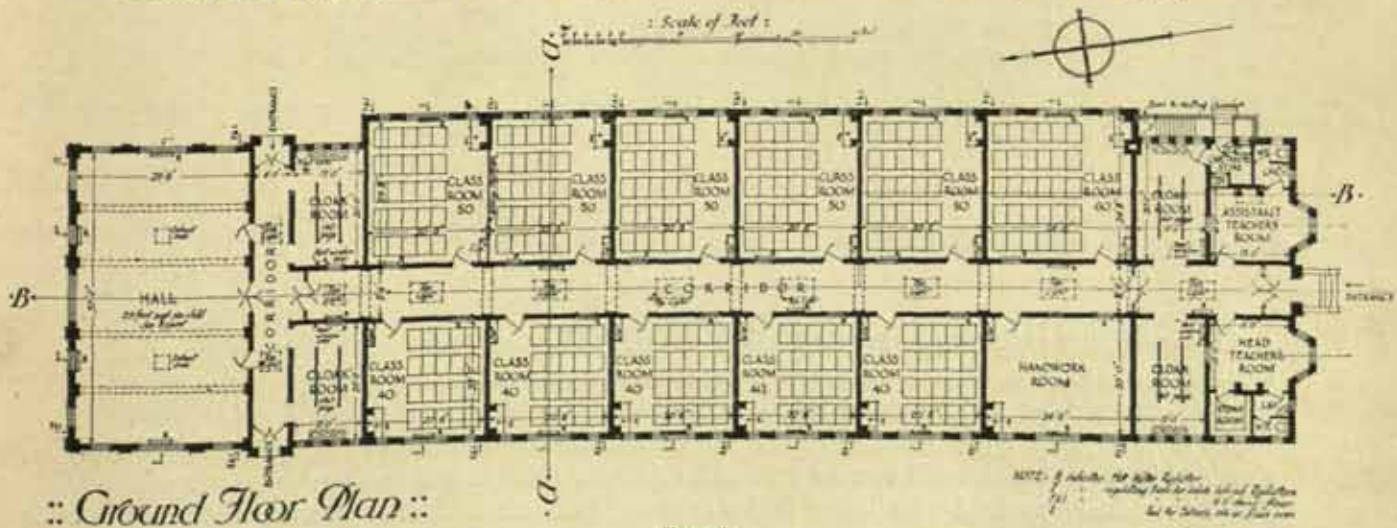


FIG. 22.—DURNSFORD SCHOOL, WIMBLEDON: PLAN OF UPPER GROUND FLOOR.
W. H. Webb, Architect.

A three-story building with accommodation for 1,008 scholars in twenty-four classrooms of forty-two scholars each. The lower ground-floor contains: heating-chamber and coal stores, manual training-room, handicraft-room, douche baths for boys and girls, girls' work-room, stores, &c.; the boys' assembly-hall on second floor, arranged to be fitted as gymnasium, with small gallery at end.

Figs. 25 and 26 are examples of *Quadrangular Plans*, built for the Northumberland and Kent Education Authorities respectively, which again can only be used economically on fairly level sites. In very exposed situations they may, no doubt, be useful, but I am doubtful whether under some conditions in summer, particularly where the quadrangle is small, they will not be found to possess some of the disadvantages I mentioned in dealing with the ventilation of a room with windows high above the floor.*

Figs. 27 and 28 are types of *Village Schools*. Fig. 27 gives cross ventilation to the cloakroom and clerestory lights to the classrooms. Fig. 28 is designed for a very exposed site on Dartmoor between 1,300 and 1,400 feet above sea level, where the provision of shelter against the prevailing westerly winds needed special attention. The heating-chamber roof will be a flat one, reaching only to the corridor window sill, so as not to obstruct ventilation, and the playgrounds



* See page 664.

will be enclosed by stone-ditched fences about 6 feet high, planted with gorse or some hardy shrub.

In what direction future developments of school planning will tend it is not easy to predict, but signs are not wanting to indicate that at any rate in provincial towns and country districts, where climate and atmosphere are favourable, *open-air* conditions will become increasingly sought after,

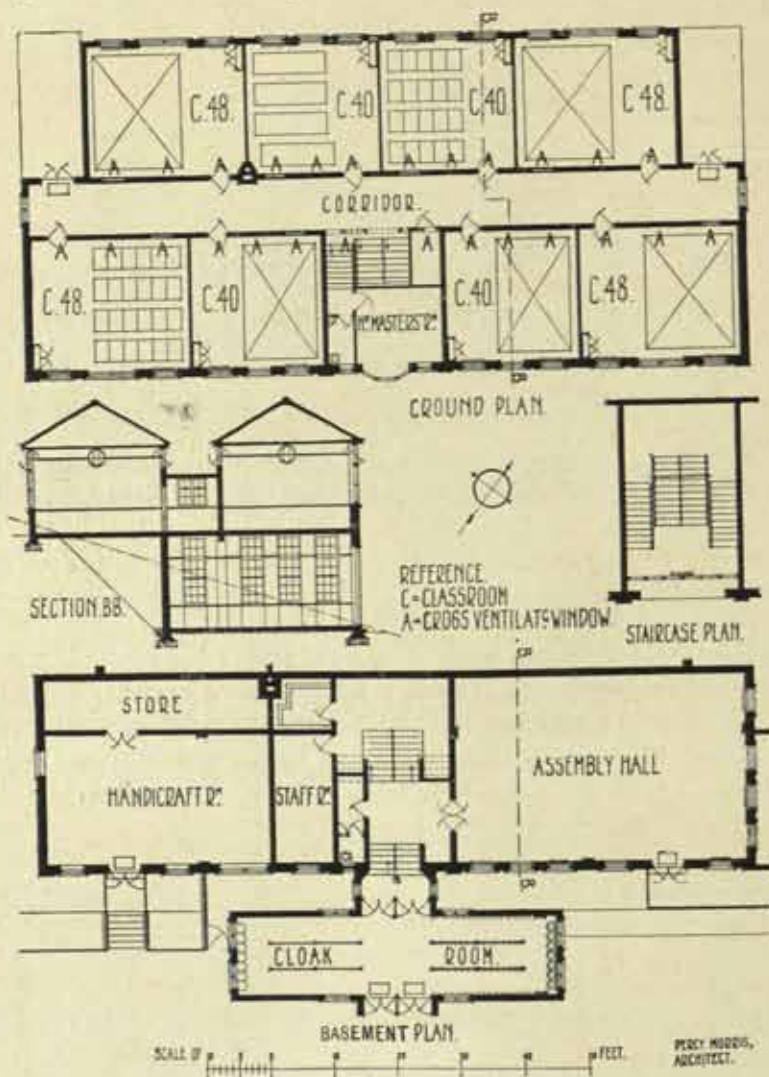


FIG. 24.—A TWO-STORY BUILDING FOR 352 BOYS.

and the possibility of throwing open the whole of one side at least of a classroom upon suitable occasions will have to be considered. Fig. 29* is a somewhat heroic suggestion by a Glasgow architect for open-air teaching, and several authorities in Wales and elsewhere are turning their attention to the same object. Apart from schools of this kind open-air schools such as have already been provided in several places will become general for delicate children and recovery cases. Fig. 30 shows the Thackley school. Buildings of this type will no doubt be used as centres for districts, giving children in crowded areas the opportunity of living for a time under healthier conditions. The subject is dealt with at some length in Sir George Newman's Annual Report, and should be

* See note at end of paper, p. 706.

kept in view. If it were possible to insure that children attended school adequately clothed, dry-shod, and properly fed, it would go far to revolutionise our present system of school planning. Under such conditions it would be possible to work in shelters of a temporary nature for probably nine months of the year.

Figs. 31-34 inclusive are examples of *Secondary Schools*. Fig. 31 is a Staffordshire example, fig. 32 a Derbyshire one, figs. 33 and 34 we have in hand in Devon. The former is designed for a long narrow site fronting a main road on the west side. It will be seen that the principles we have been discussing apply also to this type of school.

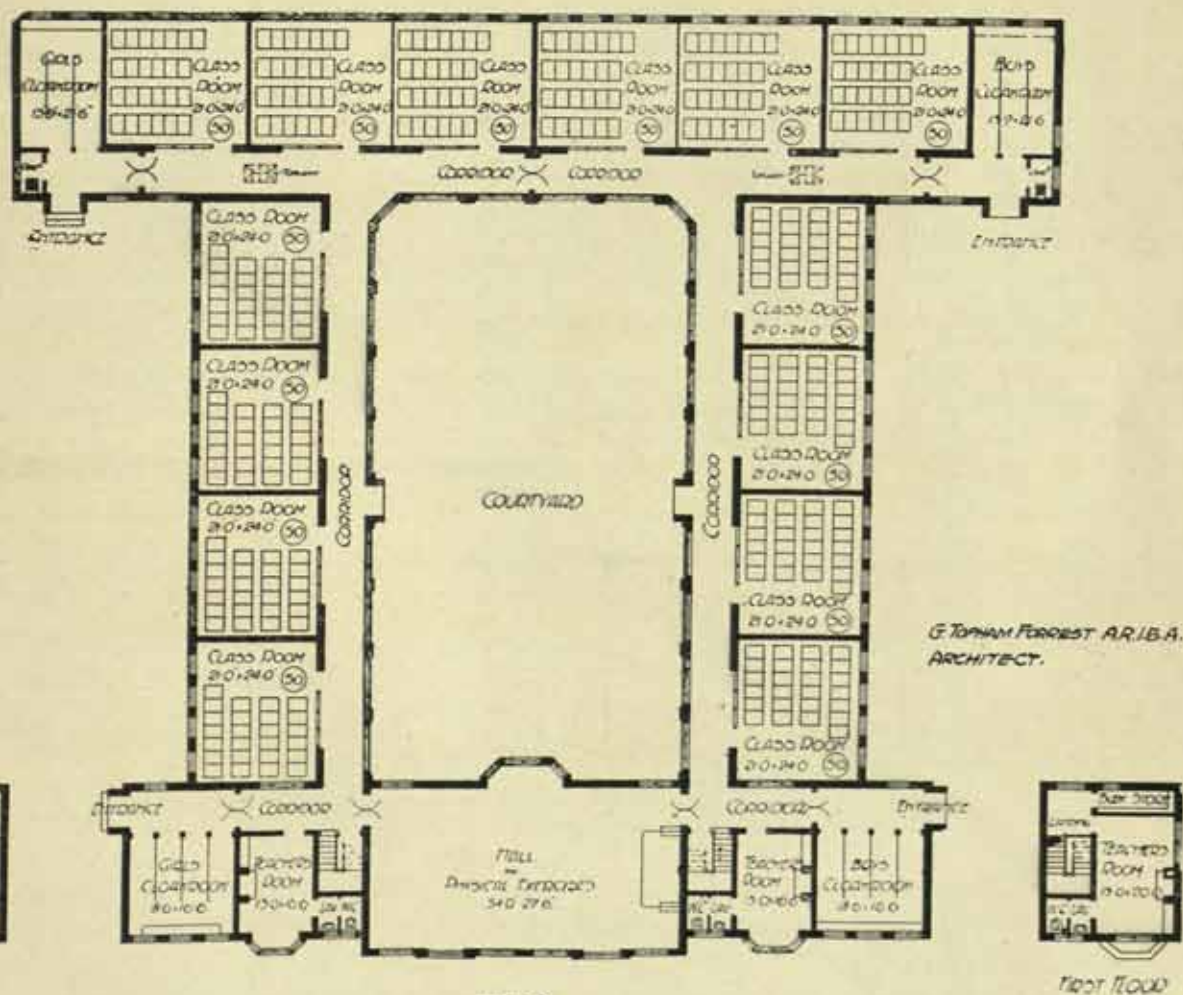


FIG. 35.

The alteration of existing buildings is a subject in itself, and time will not permit me to deal with it now, but fig. 35 shows a rather interesting addition we have recently made to a Secondary School which involved the amendment of the frontage line at A and G, the exchange of land at B for a right of way, and space for offices at C C', easements for rights of light and way respectively at E and F, the purchase of a cottage at D, also of a chapel and space for playgrounds in the rear of the school. The cost of the alterations, exclusive of furniture (except cupboards) and site, was £1,981, which included the lowering of the chapel floor 4 feet and underpinning its walls all round.

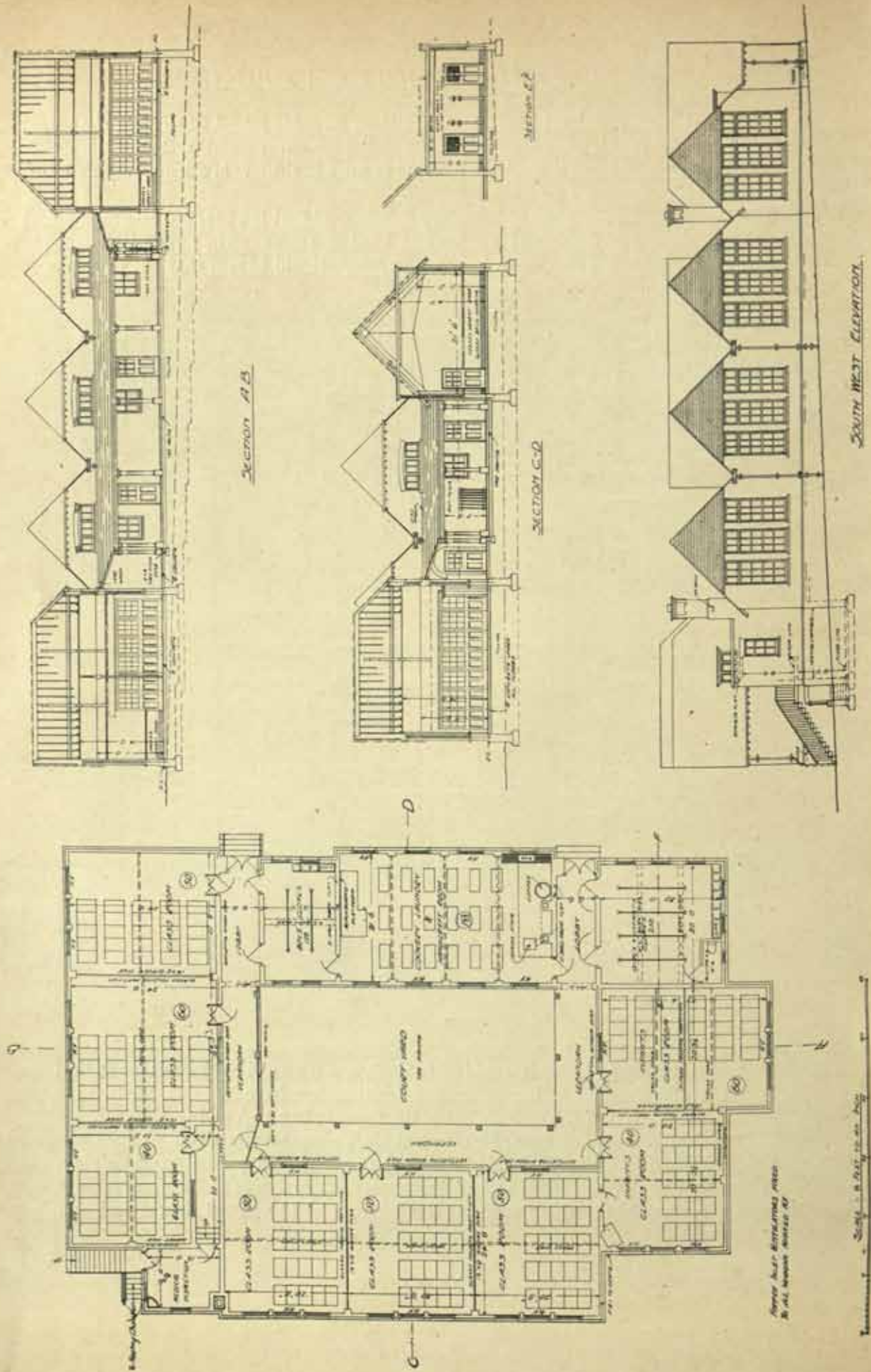


FIG. 25.—NEW SCHOOL AT LOOM, NEAR MAIDSTONE, FOR 400 CHILDREN. (MR. W. H. ROBINSON, ARCHT.)

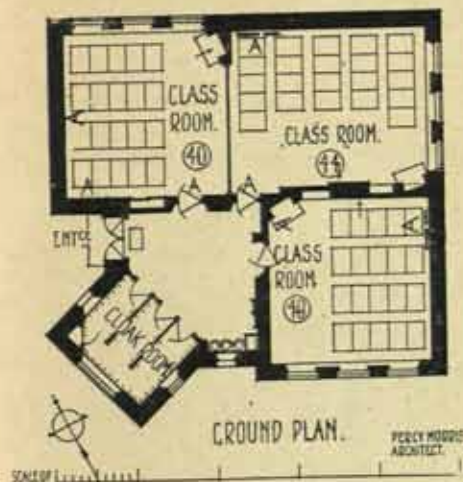


FIG. 27.—A ONE-STORY SCHOOL FOR 124 BOYS.

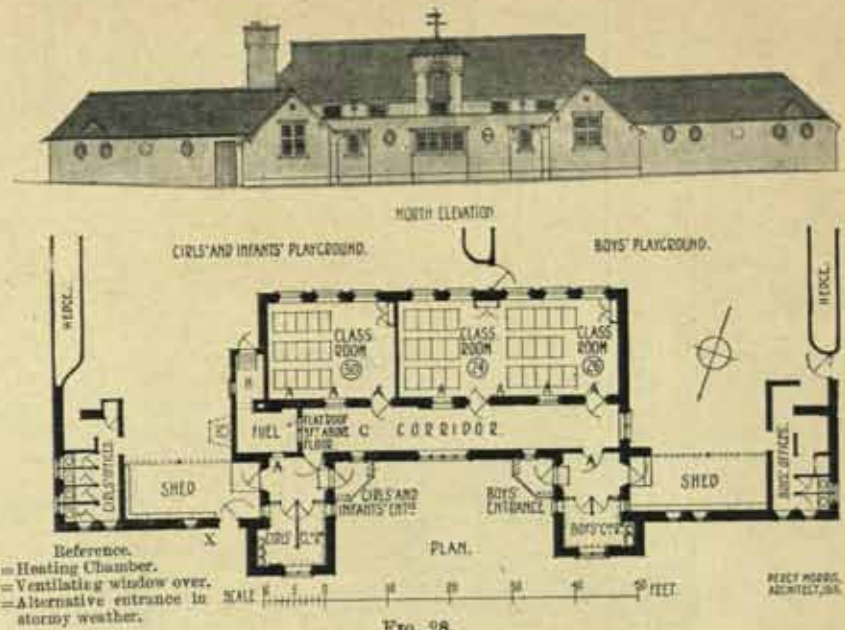


FIG. 28.

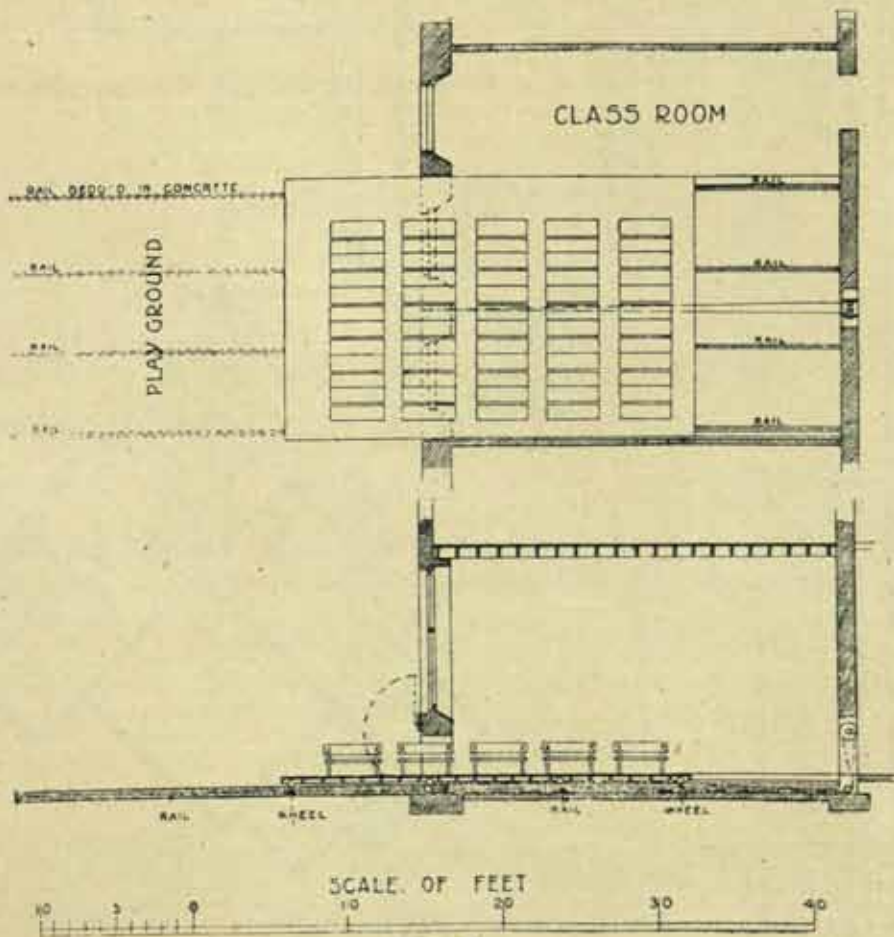


FIG. 29.

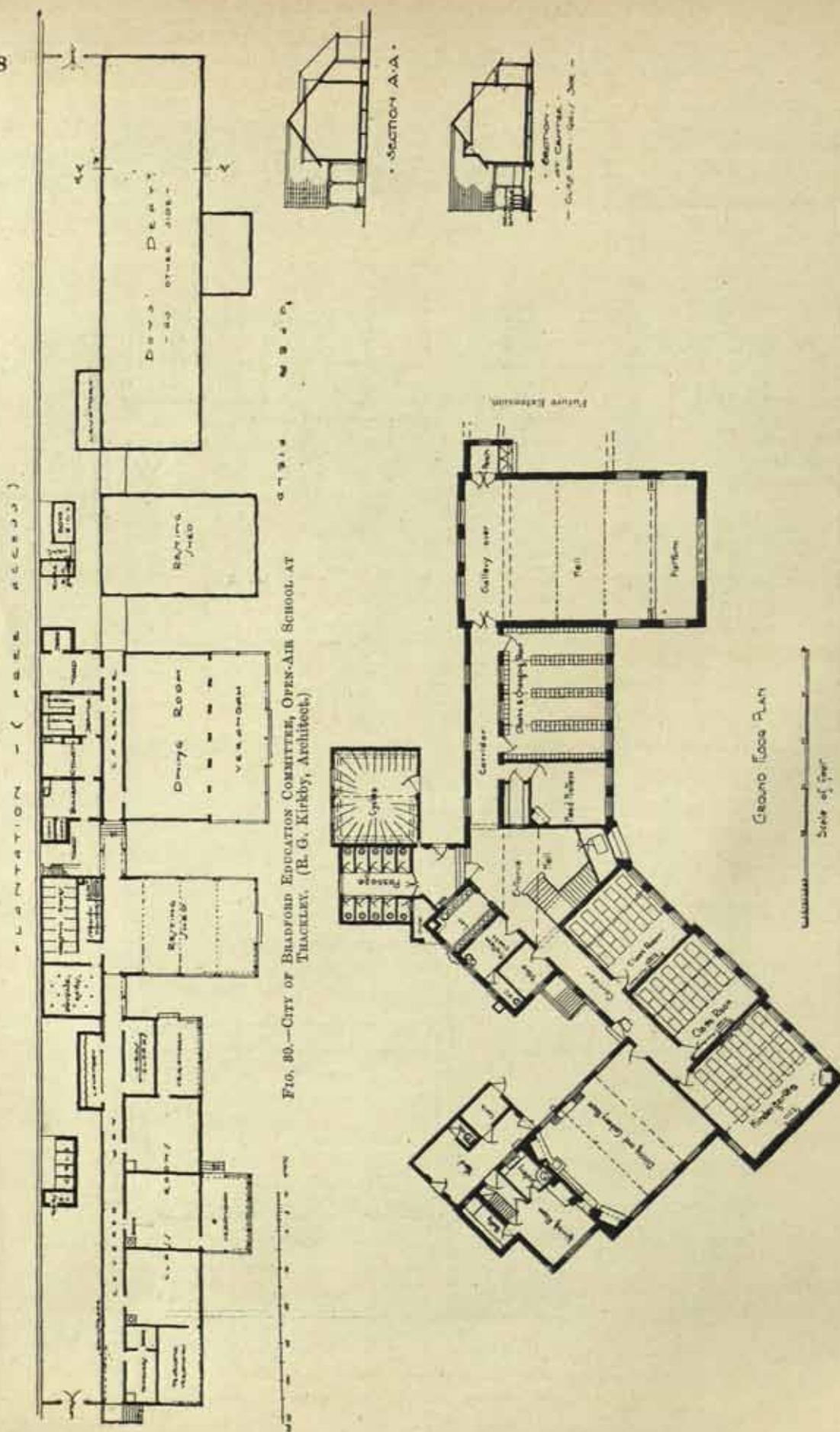


FIG. 31.—NEW SECONDARY SCHOOL FOR GIRLS, STAFFORD.
Mr. John Hutchings, Architect to the Staffordshire Education Committee.

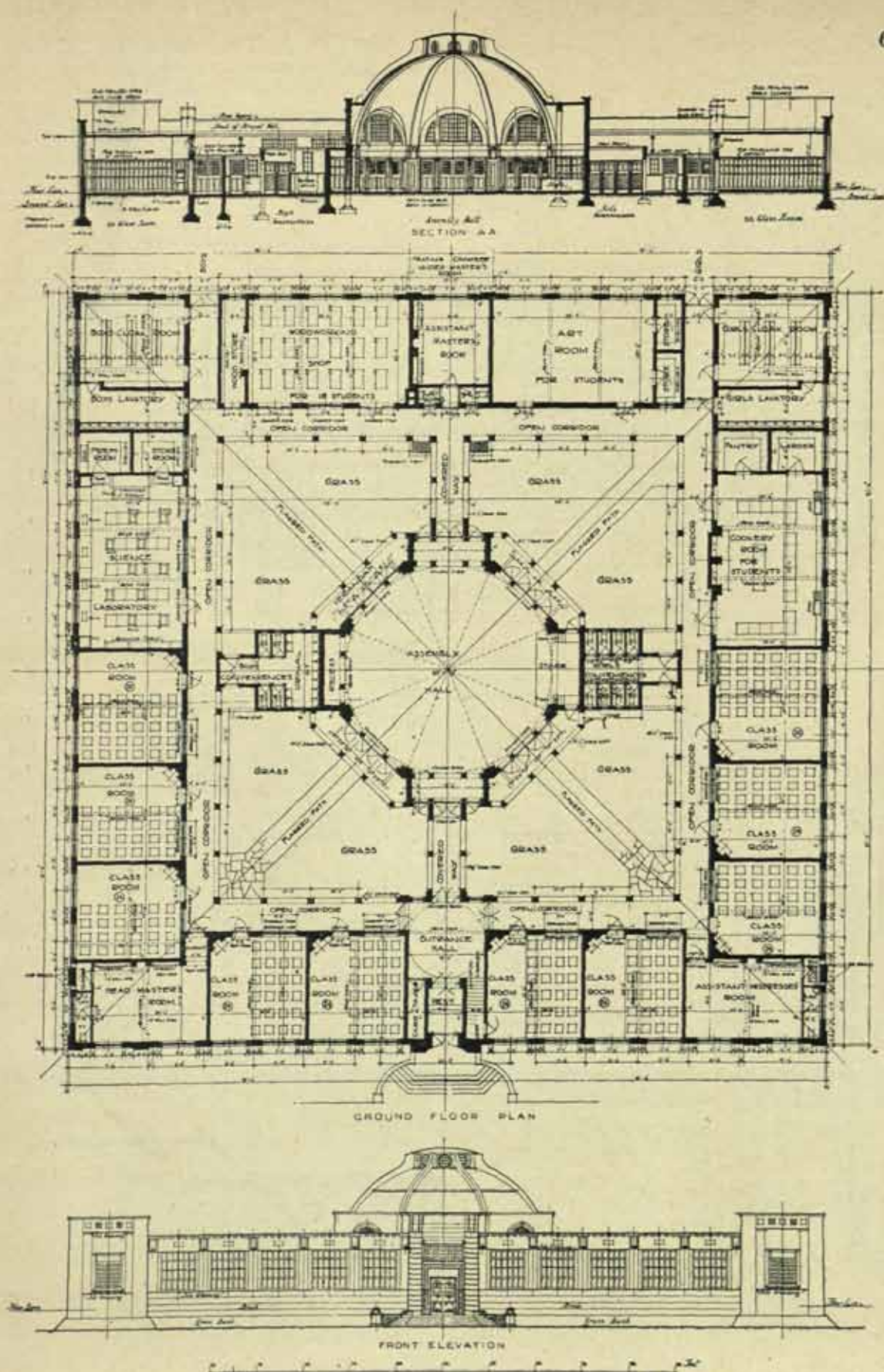


FIG. 32.—ILKESTON SECONDARY SCHOOL. (Mr. George H. Widdows, Architect.)

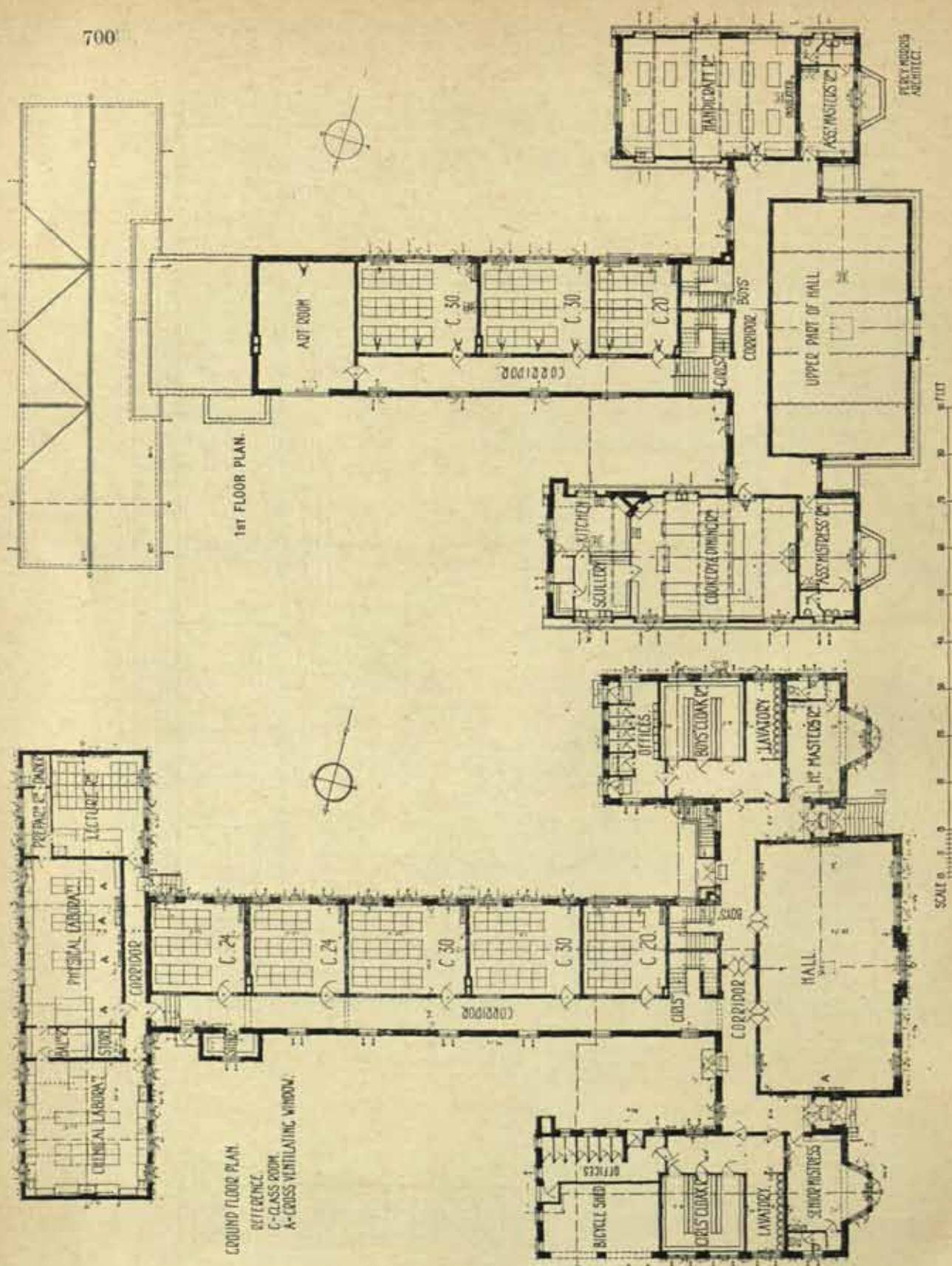


FIG. 35.—MIXED SECONDARY SCHOOL FOR 205 SCHOLARS. (See elevation, fig. 33A, p. 703.)

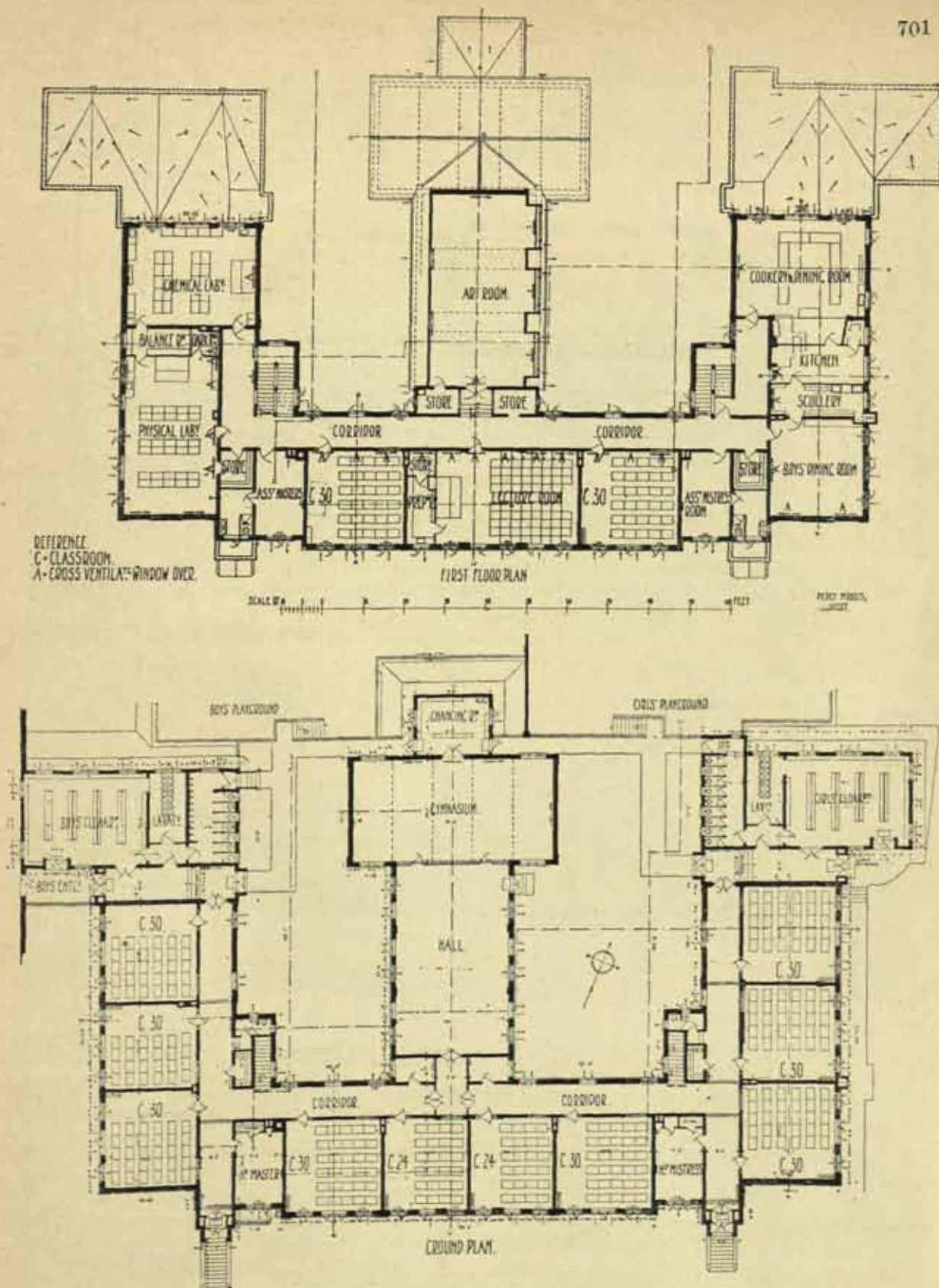


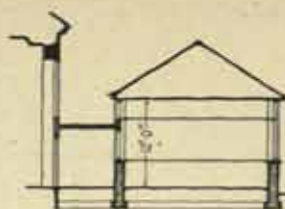
FIG. 34.—DUAL SECONDARY SCHOOL FOR 174 BOYS AND 174 GIRLS. (See elevation, fig. 34A, p. 703.)

FIG. 35.

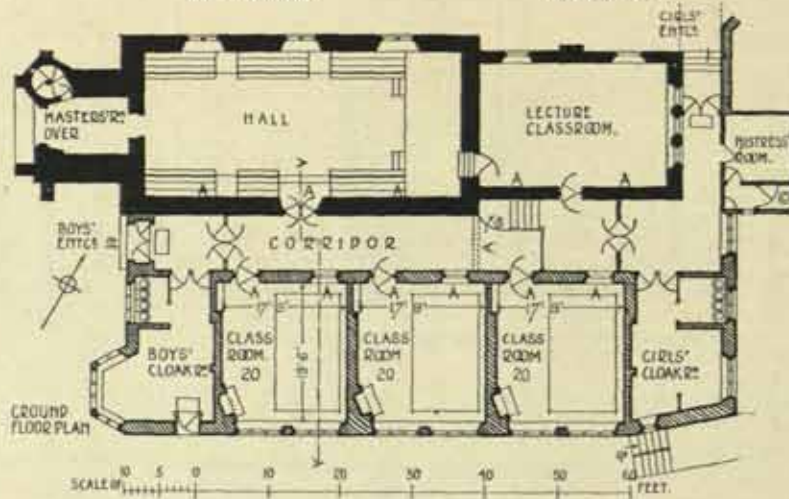
REFERENCE:
OLD WORK. —
NEW WORK. —
A-CROSS VENT
WINDOW OVER.



WEST ELEVATION.



SECTION A-A.



PERCY HODGKIN,
ARCHITECT, LONDON.

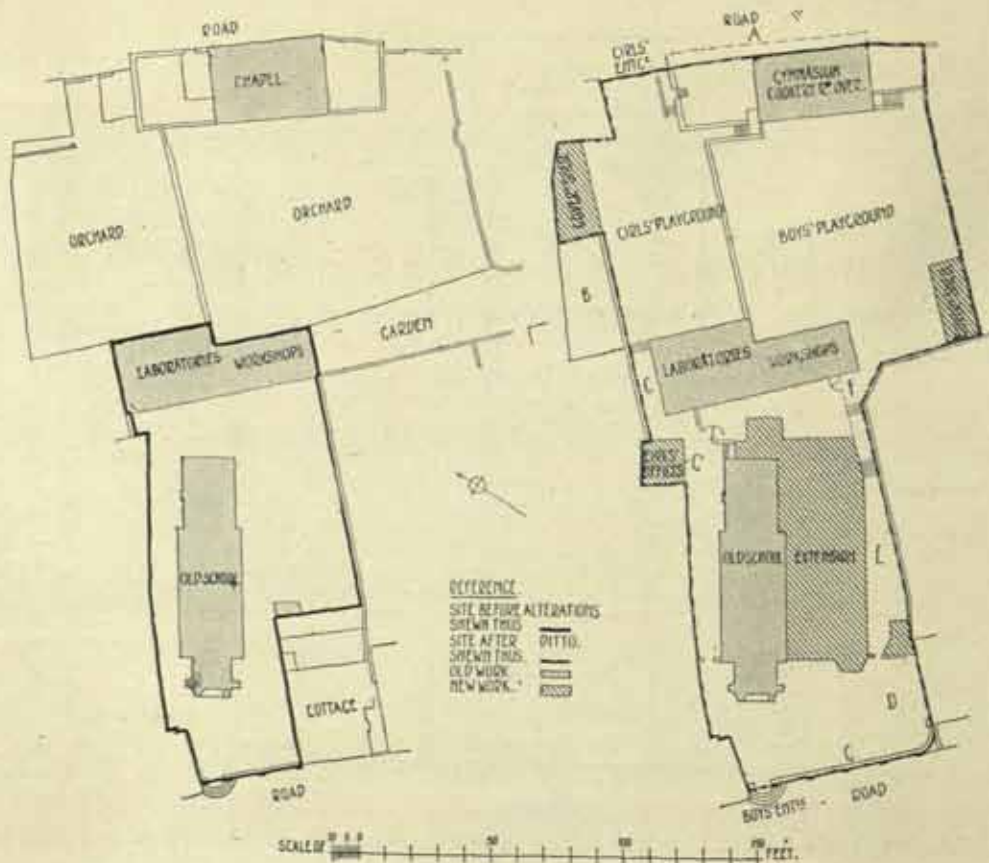


FIG. 35. (See p. 695.)

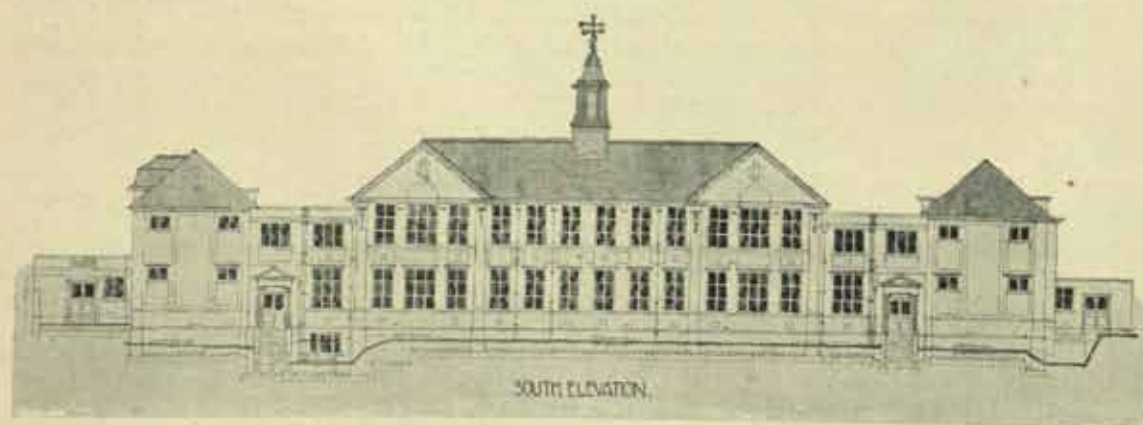
The schools I have illustrated serve to show that one is no longer tied to a particular type of building, but that we are free to find the solution of the problem best fitted to the needs of the case. The shape and levels of the site necessarily dictate the plan. Where land is cheap



WEST ELEVATION.

FIG. 33A. (See plans, p. 700.)

there is a distinct tendency to provide one-story buildings; these have great advantages, and do not add to the cost of building. As to aspect, south-east is most generally accepted as favourable for classrooms, and in Devon we always aim at placing them as nearly as possible facing this direction. Aspect is also a consideration which influences the Committee in the purchase of sites.



SOUTH ELEVATION.

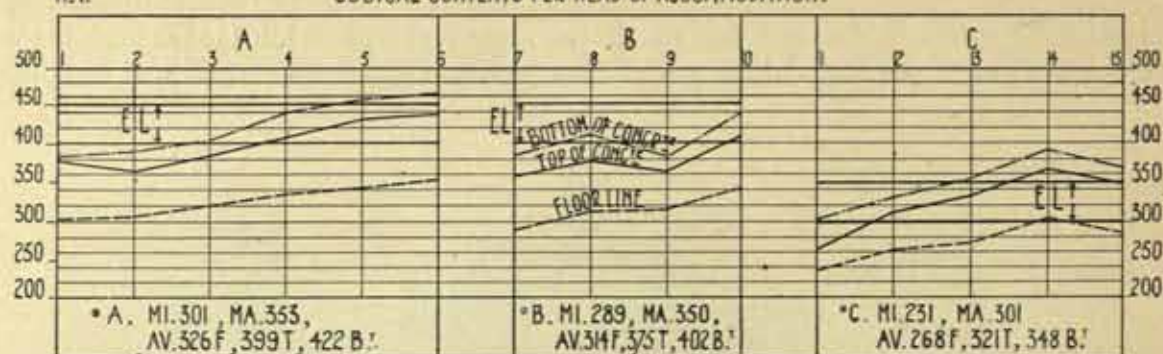
FIG. 34A. (See plans, p. 700.)

COST OF SCHOOL BUILDINGS.

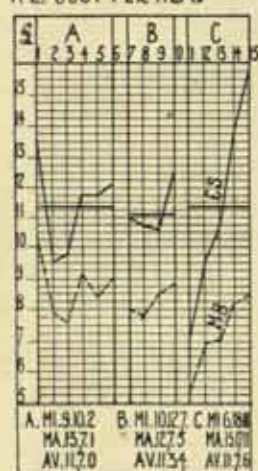
It is not my intention to discuss at any great length the cost of school buildings, and I can only deal with one aspect of it—the result rather than the method of achievement—but it is a subject which needs putting upon a more consistent footing. The cost per head is often quoted indiscriminately without reference to any fixed basis. Thus it is used to refer to the cost of the main building only, or to the cost of the completed school inclusive or exclusive of furniture, according to the motive in view; and one often hears figures of this kind used most unscrupulously. Again, the cost per cubic foot may have reference to the contents of the building to the floor line or to the top or bottom of the concrete foundation. If we wish to have figures

No. 1.

CUBICAL CONTENTS PER HEAD OF ACCOMMODATION.



No. 2. COST PER HEAD



REFERENCE.

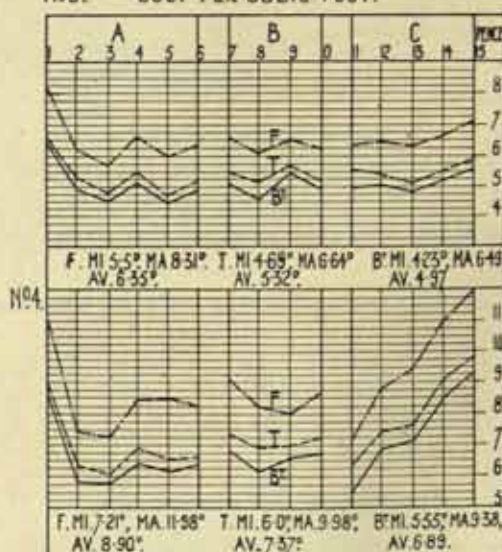
A=ASSEMBLY HALLS.

B= " CORRIDORS.

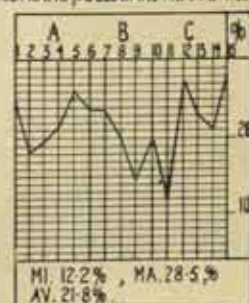
C=VILLAGE SCHOOLS. F=FLOOR LINE. T=TOP OF CONCRETE. B*=BOTTOM OF CONCRETE. MI=MINIMUM. MA=MAXIMUM.

AV=AVERAGE. CS=COOKERY ROOM. HCT=HANDICRAFT ROOM. EL=ECONOMICAL LIMITS. CS=COMPLETED SCH. MB=MAIN BUILD.

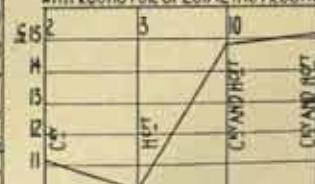
No. 3. COST PER CUBIC FOOT.



No. 5. RATIO % BELOW AND ABOVE FLOOR.



No. 6. COST PER HEAD OF COMPLETED SCH. WITH ROOMS FOR SPECIAL INSTRUCTION.



* Minima and maxima in respect to floor line.

GENERAL CONSTRUCTION.

WALLS, brick or local stone.

ROOFS, boarded, felted, and slated.

FLATS, reinforced concrete asphalted.

FLOORS, 1 1/2 inch wood block.

PLASTERING, hard plaster.

HEATING, A and B, low pressure, hot water; village schools, open warm-air grates (No. 15, hot water).

PLAYGROUNDS, A and B, tar paved; village schools, gravelled.

BOUNDARY FENCES, unclimbable iron fencing.

DIVISION WALLS, brick or stone.

NOTES.

1, 4, 5, 7, 8, 10, 12, 14, and 15. One story mixed and infants' schools.

2 and 11. One-story infants' schools.

3, 6, and 13. One-story boys' schools.

9. Two-story boys' and girls' school.

1. Reinforced concrete foundations.

10. 1/2 acre enclosed by stone walls, cost of drainage very heavy.

13, 14, and 15. Include also cost of wells.

15. Retaining walls and exceptional approach.

at our disposal for purposes of comparison, or to meet charges of extravagance, it is of the greatest service to keep the cost of each building in tabulated form and dissected. When one is dealing with hilly sites it is useful to work out the ratio of the cubical contents below the floor line and above it, because it enables us to estimate by a comparison of different schools what proportion of the expenditure may rightly be deemed due to special circumstances.

In the report of the Departmental Committee on the cost of school buildings it was laid down that it is possible to design elementary schools, including halls, at a rate of 400 to 450 cubic feet per head of accommodation, although it is said the amount frequently runs up to 500 or 600 feet. Similarly a school without a hall will contain from 300 to 350 cubic feet per head; and it is stated that the difference in the cubical contents of a building per head probably affords the best check of economical planning. It is not quite clear in the report whether the contents are measured to the floor line or to some other point,* but obviously if it is to afford a reliable standard of comparison the floor line must be used. Take, for example, two identical buildings placed upon sites which require a depth of foundation of 3 feet and 10 feet respectively. If cubed to the bottom of the concrete foundation, one might fall within the economical limit and the other exceed it, but on this account it would be absurd to argue that one was economically planned and the other extravagant. All it could prove would be that one of the sites might not be an economical one to build upon. In using this check it is necessary to keep separate the contents of rooms for special instruction.

Diagram No. 1 shows graphically the application of the rule to fifteen Devon Elementary Schools. The figures are to some extent being modified now that smaller classrooms and isolated halls are becoming general, although several of the schools included in the chart have classrooms for forty children only. The bottom line shows the cubical contents of the buildings measured to the floor line, and it will be seen that it falls throughout its length below the lower limit of economy, except in one instance where it exceeds it by one foot only. The averages of all three lines show a good margin in favour of economy. Diagram No. 2 gives details of the cost per head of accommodation of the completed schools including all cupboards but exclusive of other furnishing; also the cost of the main building only. Diagram No. 3, starting with the bottom line, shows the cost per cubic foot of the main building measured to the bottom and top of the concrete foundation and floor line respectively. Diagram No. 4, the cost per cubic foot when the cost of the completed building exclusive of site and furnishing is divided by the cubical contents of the main building. Diagram No. 5, the percentage of the ratio of the cubical contents of the main building below and above the floor line. Diagram No. 6, the cost per head of schools with rooms for special instruction.

Now take Diagram No. 3, the average of the whole gives a fair idea of the cost per cubic foot, viz.:—6.35*d.*, 5.32*d.*, and 4.97*d.* measured respectively to floor line, top and bottom of the concrete. This compares with 4.5*d.* to 5.0*d.* quoted in the Departmental Committee's report as the average cost per cubic foot where bricks are cheap and sites favourable, but the report does not say to what point the measurements are taken.* I generally adopt the bottom of the concrete, and shall now refer to that only.

The fluctuation of the cost per cubic foot between the minimum and maximum, 2.26*d.*, does not convey a correct impression, but if you omit two schools which were particularly exceptional in regard to site you obtain for the remaining thirteen .94*d.* as the result,† a figure which is more reliable for estimating. In Diagram No. 4, because our sites vary so much as to levels, proximity to railway stations and facilities of drainage and water supply, you find, as one would expect, great fluctuation, viz.:—3.83*d.*, and an average of 6.89*d.* per cubic foot; representing 1.92*d.* per cubic foot‡ for all external work, other than the main building, reckoned in regard to the cubical contents of the main building. This is high compared with the figure, 1*d.*, quoted in the report referred to (*here again we have no information as to the point of measurement), and

* I have since ascertained that the measurements were taken to a point about 2 feet below the floor line.

† Only two of the schools included in the charts were tendered for since the recent rise in the cost of building,

which in Devon amounts to between 20 and 25 per cent.

‡ The corrected figures in view of footnote* on this page are 3.98*d.*, 7.37*d.* and 2.05*d.* respectively.

proves that because of the nature of our sites we are at a disadvantage; the Devon figure representing an average ratio of 27.8 % of the cost of the completed school as against 17.3 %. If you refer to Chart 5 you find the explanation in that the ratio of foundation to the cubical contents above floor line is high, which means that the sites are usually hilly. No. 11 represents a level site, No. 9 a two-story building.

The effect of the foregoing figures is seen in Chart 2, the average cost per head of accommodation working out at £11 5s. 11d., as against an average of £10 to £11 quoted in the report for schools built under the most favourable conditions, so that in spite of our handicap we cannot be taxed with extravagance. Of the fifteen schools four are under £10, and eight under £11 per head.

No useful figures can be derived from Chart 6, since a special instruction centre for a school of 250 and 750 probably would not vary in size, but would affect the cost disproportionately.

I will take one more example and trace the history of an individual school. No. 1 in Diagram No. 2 shows a school costing £13 17s. 1d. per head; trace it to Diagram No. 1 and you will find the cubical contents per head nearly 100 feet below the lower limit of economy; what then brings the cost so much above the average? Diagrams No. 3 and 5 show that the cost per cubic foot and ratio of foundations were heavy. The explanation is a sharply sloping site and the necessity of reinforced foundations.

This brings my paper to a close; the objection is sometimes raised that we are treating schools as mere sanatoria and neglecting the claims of architecture. As I understand it the primary object is to produce a building fitted for its purpose, and if this points to a sanatorium, the sooner we recognise the fact the better. If tradition teaches us anything, surely it is that all good architecture has sprung from the needs of a building as expressed in its plan, and all healthy development has followed the same course. It rests with us, therefore, to reconcile the one with the other. It is, I admit, a subject for regret that many Education Authorities recognise the one, and ignore or relegate to a very subordinate position the other, but in doing so they are unfortunately giving effect to public opinion. Time may bring about a change; it will be a gradual one, but meanwhile, if we have not the means at our disposal, I submit that until internal fitness is secured, no consideration of external expression must be allowed to trespass. There is all the more need, therefore, to exercise restraint, and even if we have to clothe our buildings in garb as sombre as a Quaker's, it is better than to sacrifice efficiency by stooping to some pitiful expedient which will bring discredit upon the profession we follow.

N.B.—The writer desires to thank those who have kindly given him permission to reproduce illustrations. He regrets that he is unable to trace the authorship of Figs. 23 and 29, but takes this opportunity of acknowledging his indebtedness.

Erratum.

Page 659, line 4: Insert the word "said," so as to read: "In regard to No. 5 there is said to be an increasing tendency," &c.

APPENDIX A.

.....COUNTY EDUCATION AUTHORITY.

.....SCHOOL.

TENDER FOR HEATING.

I (We) hereby tender to instal a HEATING APPARATUS in accordance with the accompanying PLAN, and in accordance with the SPECIFICATION AND FORM OF GUARANTEE prepared by, (£ : :), subject only to a cash discount of 2½ per cent. to the General Contractor.

I (We) have made provisions as follows :—

1. TOTAL RADIATION including all concealed pipes, mains, risers, flow and return pipes.....square feet.
2. TOTAL EFFECTIVE RADIATION.....square feet. (a) Pipes.....square feet. (b) Radiators.....square feet.
3. BOILER CAPACITY, direct radiation..... square feet.
4. Total cubical contents ... Classrooms. Corridor and Hall. Cloakrooms. Staff Rooms.
.....cubic feet cubic feet cubic feet cubic feet
5. Average heating surface
per 1,000 cubic feet square feet square feet square feet square feet
Maximum ditto square feet square feet square feet square feet
Minimum ditto square feet square feet square feet square feet
6. Clear area of each F.A.I. behind ventilating radiators.....square inches.
7. Length of floor channels required.....feet by.....inches wide, by.....inches deep. Stoneware
pipes.....feet.....inches diameter.
8. Number of radiators provided. (a) Ventilating..... (b) Ordinary..... Total.....
9. Number of main circuits from Boiler..... Number of control valves to mains.....
10. Price per foot super of effective heating surface

I (We) hereby agree on my (our) TENDER for the said works being accepted to sign the said PLAN, SPECIFICATION AND FORM OF GUARANTEE.

Name.....

Address.....

Date.....191.....

To the

..... EDUCATION AUTHORITY.

REVIEWS.

GARDEN MAKING.

The Art and Craft of Garden Making. By Thomas H. Mawson, Hon.A.R.I.B.A., Lecturer on Landscape Design at the University of Liverpool. Fourth Edition. Fc. Lond. 1913. 50s. net. [B. T. Batsford, 94 High Holborn.]

It is only thirteen years since the first edition of this handsome book appeared, and the author is to be congratulated on the demand for the fourth edition of his work within that time, an indication, surely, of the rapid growth within recent years of enlightened views on garden design. A new edition of a well-known book is often passed over as being mainly a reprint of what has been perused before. This edition, however, marks a more definite step in advance than any of the previous issues. It has assumed a folio size in place of the quarto of former editions, and makes a stately volume, companion to the author's recently issued *Civic Art*. It has been in great part rewritten, and every section of it much enlarged, with almost a hundred pages more than the last edition, so that it is practically a new book. Nor does one altogether grudge the older editions on one's library shelves, for they show the evolution of many interesting garden designs from the sketches in the early editions to photographs of the work as carried out in this the latest edition.

The volume opens with an admirable sketch of the history of garden craft in this country, from the gardens of Norman and Tudor times down to those of the Renaissance. It briefly narrates the destruction of many of these last, under the influence of the "landscape" school of the eighteenth century, and brings the reader down to the modern revival in garden design. From this one is carried naturally in Chapter II. to consider the aim and position of the art of garden making in the present day.

The third chapter, on the choice of site and its treatment, is of the greatest value to the architect, indeed to all who have before them the building or occupying of a house in the country, for in the city the choice of a site is generally "Hobson's choice." All the various points which demand attention are reviewed, and sound advice is given on the most important question of where the house should be placed on the site chosen. Emphasis is well placed on the necessity for preserving the characteristics and individuality of the site in whatever treatment it may undergo to make it a fit environment for the house. The relations to each other of the various parts and features of a house and its grounds are then broadly but sufficiently indicated, and the various points are well illustrated by a number of typical plans and sections.

The chapters which follow take up the essential parts of the garden and grounds in fuller detail. Entrances and carriage courts have naturally the first place. The gateway strikes the first note, and

it should be in harmony with that to which it leads. This is well exemplified by a number of excellent designs of houses and gardens of various sizes. The most common fault is to have the entrance too pretentious for the dwelling to which it is the portal.

The design of gates and fences for the garden and park, and the æsthetic possibilities of these, have been often overlooked, the proprietor handing them over to the tender mercies of the iron merchant, when at no more, and possibly less, expense he might have had a more enduring and more beautiful enclosure. The varieties of material at our disposal and their treatment are abundantly illustrated.

The subject of drives and avenues is then dealt with in a chapter which goes fully into the practical and artistic considerations involved in the design of the principal access to the house. Long drives which meander round an estate for no other purpose than to exploit its size are rightly condemned, and the simple dignity of the direct approach is well illustrated. The greater part of this chapter is entirely new, little of its matter appearing in even the third edition. The advent of the motor car has considerably affected the design of drives and approaches.

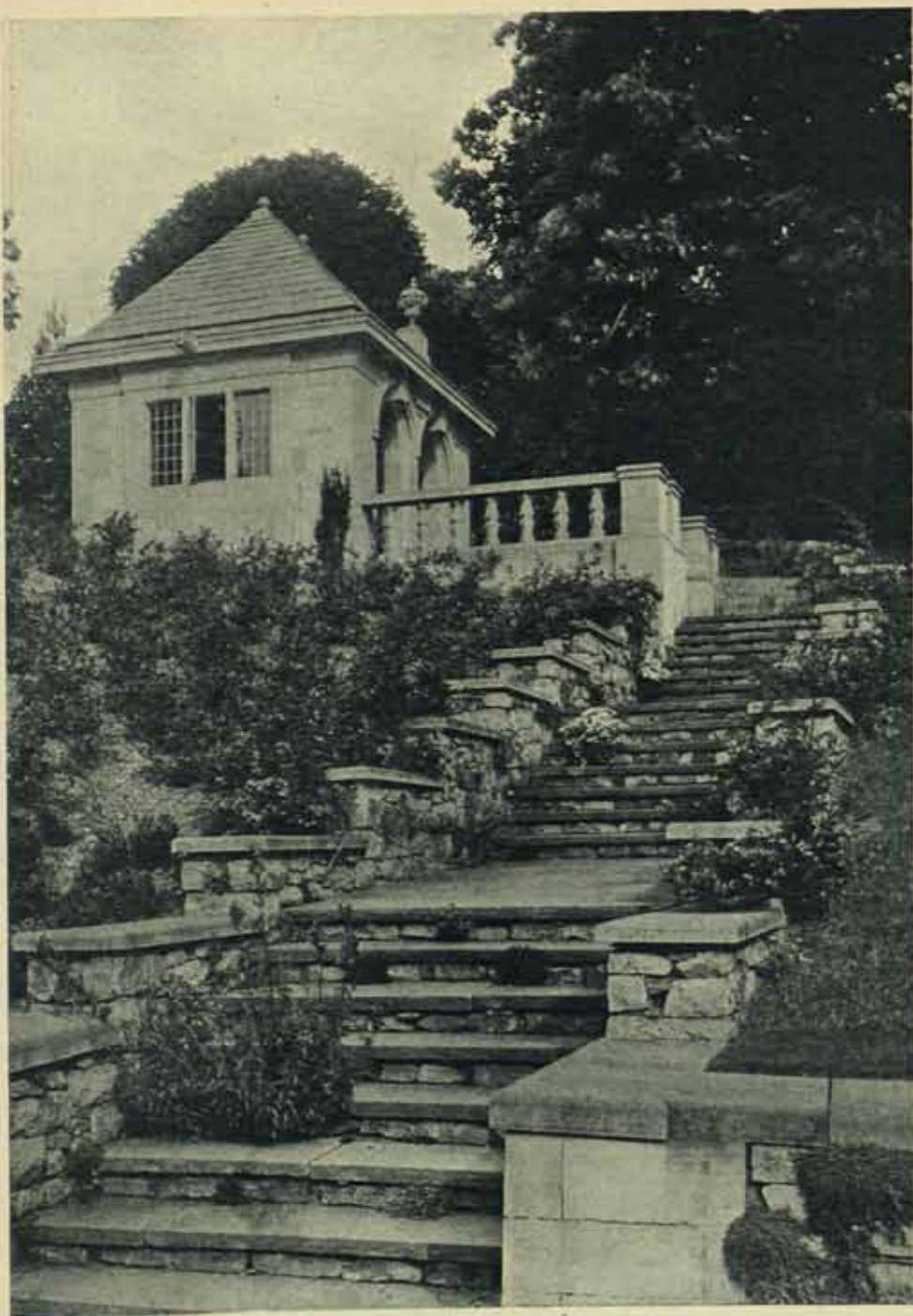
In dealing with terraces and terrace gardens, few will nowadays dispute the author's view that the whole garden scheme gains if the house stands slightly elevated above the general level, on a sufficiently spacious plateau. There is no doubt that the house becomes thereby airier and healthier, and that its appearance is enhanced by a slight elevation, while from its windows better views are had of the garden and surrounding country.

Flower gardens, beds and borders, occupy a delightful chapter on these essentials to every garden, large or small, and the finishing touch to every composition. Simplicity in the shape of flower beds is urged, and many examples are given of the planning of herbaceous borders and other features of the flower garden. As every gem should have its foil, so the flower garden demands the lawn. Every house should have somewhere a lawn, a broad expanse of greensward, for the lack of which nothing else can atone. The repose and quiet dignity which should be apparent in the gardens of every house must not be destroyed by the scattering of shrubs or fancy-shaped beds of flowers over the lawn, which has a beauty all its own. It should be framed with masses of foliage, and its surroundings may glow with colour, but its green restfulness should be unbroken. How to lay out and form lawns, glades, and garden walks is fully gone into.

Two chapters are devoted to what may be called the architectural adornments of the garden, which fulfil important functions, both practical and æsthetic. The author rightly insists that these should be carefully designed with reference to the whole scheme, each fitting naturally and inevitably into its proper place, and not dotted about without

reference to their surroundings. Gardens otherwise well designed are often spoiled by incongruous and vulgar accessories. There is no doubt but

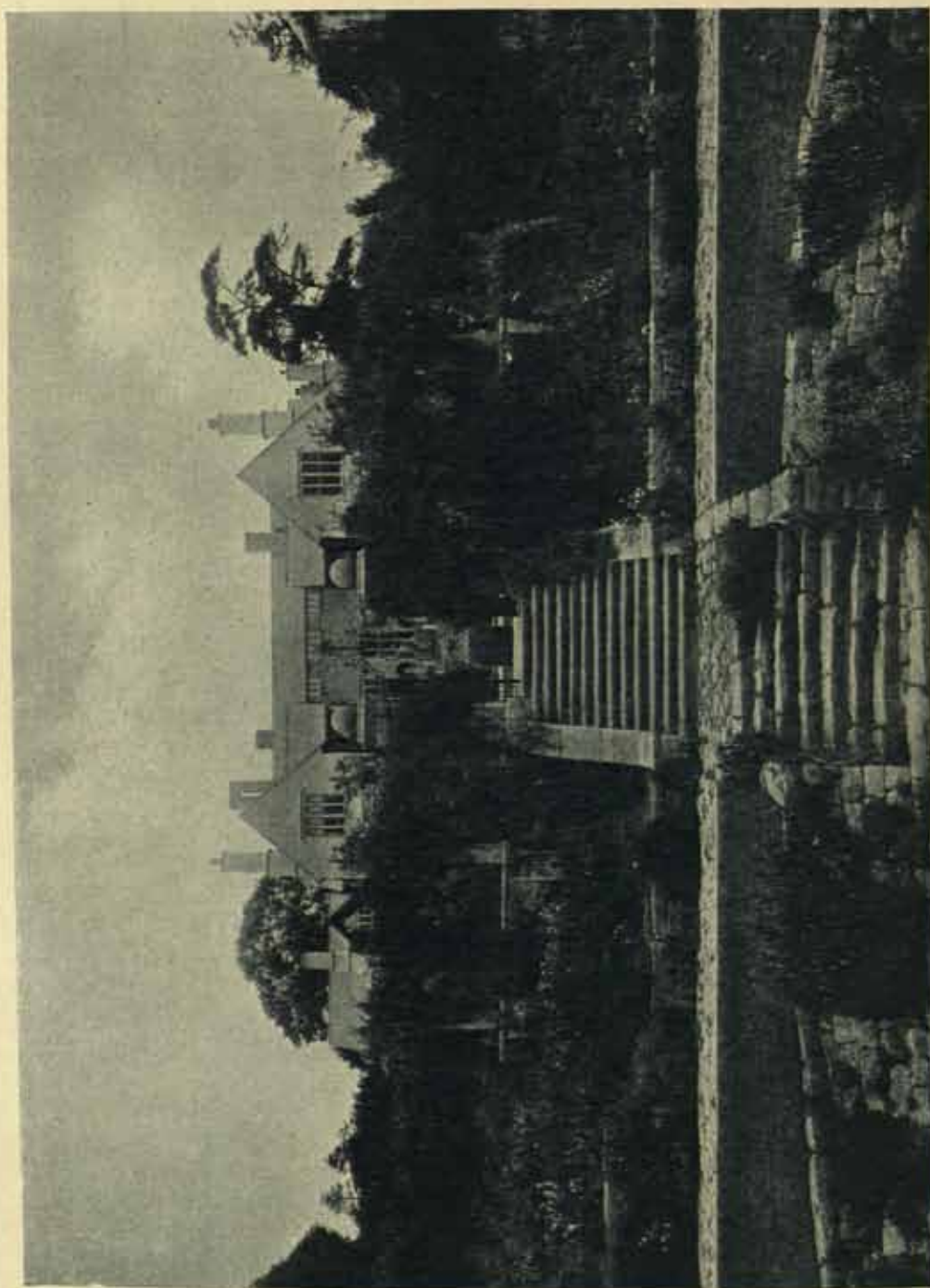
thus can harmony be obtained and that unity of house and garden result which should be the aim of all concerned. A wealth of beautifully designed



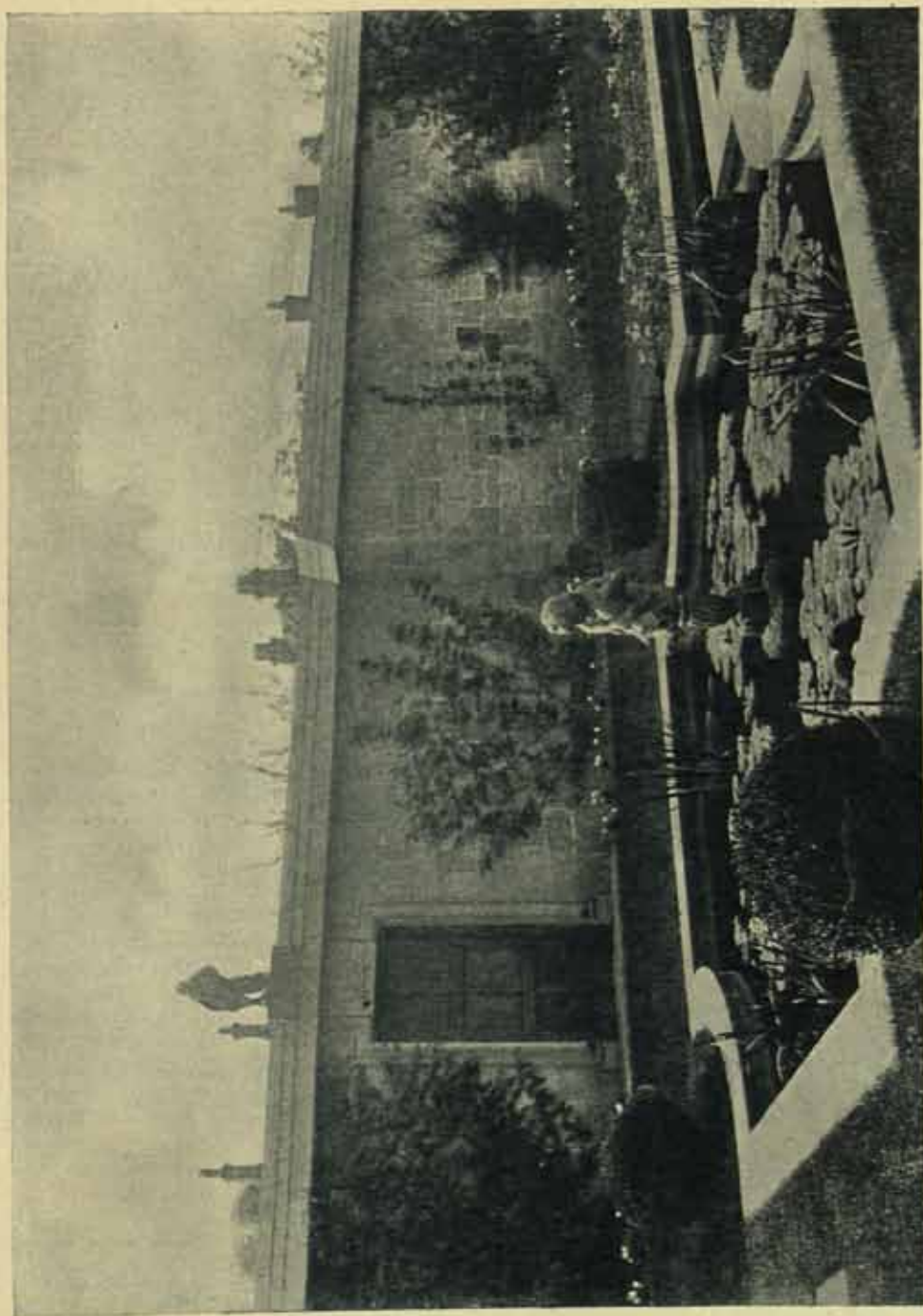
THE SUMMER-HOUSE, WOOD HALL, COCKERMOUTH.

that the architect of the house should have in his hands the designing of all these, so that the feeling of the house should extend into the garden. Only

garden-houses, pergolas, verandahs, rose arches, seats, and other furniture of the garden is given, while the use of sculpture is also dealt with, and



CLIMBERS AT WOOD, DEVONSHIRE. LOOKING TOWARDS THE HOUSE.



WATER LILY POND AT AHTON-ON-THRENT.

those reminiscences of bygone days which seem now at home only in a garden—sundials, "the horloge of the first world."

The ideal garden is incomplete without the presence of water, in one or other of its forms—Nature's mirror in the still pool, the murmur of the brook, or the rush of the fountain. All these are charmingly discussed and illustrated in a chapter on "The Decorative Treatment of Water." The author remarks how seldom one comes across a wall fountain in the average garden, which is all the more surprising in view of the many models for these which may be seen at Burlington House and elsewhere.

Following this chapter is one on rock, wall, and bog gardens, which is almost entirely new. The design of conservatories, greenhouses, vineries, and fruit-houses is gone into in full detail, and amply illustrated. Kitchen gardens and orchards also claim attention, and the way in which these may add to the beauty as well as the usefulness of the garden is well brought out.

The remaining chapters deal with the cultural aspects of the garden and park, treating of the formal arrangement of trees and planting for landscape effect, with notes on trees and shrubs, climbers for walls, pergolas and trellis, and hardy perennials.

Concluding the work, there is a series of examples of garden design, fifteen in all, illustrated by plans, sections, and photographs. These range from small houses to large country seats, and there are some interesting illustrations of gardens of exceptional kinds—for the Highlands and for the Lake district; for an entirely flat site; for a classic mansion, and for an old Tudor house.

It is a pleasure to recommend this as pre-eminently the book on garden design for the architect. It is not, like so many garden books, a rhapsody of fine words. It is an essentially practical book, sane, clear, and well arranged; full of useful information, the garner of many years' experience, and the fruit of enthusiastic study. Architects may congratulate themselves that this store is at their disposal. The design of the garden, what Vinet calls "the exterior house," calls them away for a time from the prosaic and commercial to the fresh air, to "the breath of flowers," where Nature and Art meet, not in conflict, but in harmony and peace.

Only one word need be said about the book itself, its format, paper, printing, illustrations—it is a Batsford book, and there is nothing more to say.
Aberdeen. J. A. O. ALLAN.

JOHN THORPE IN CHELSEA.

L.C.C. Survey of London. Vol. IV. The Parish of Chelsea (Part II.). By Walter H. Godfrey. 4s. Lond. 1913. [London County Council, Spring Gardens.]

This is a valuable volume, by Mr. Walter H. Godfrey, devoted to a very interesting district, full

of information, and accompanied by 104 plates agreeably reproduced from measured drawings, engravings, and photographs contributed by numerous enthusiastic helpers. There are also reproductions in the text, notably the plans and a rough sketch of Sir John Danvers' house, the originals of which are in the Soane Museum, "preserved among the collection of the Elizabethan architect, John Thorpe." Almost entirely on supposed evidence of the plans in this collection, John Thorpe has been accounted an architect representing the transitional period of English architecture, and it is hardly surprising that there are fanciful portraits in sculpture on the Albert Memorial and the Victoria and Albert Museum. There is no positive evidence that he designed any of the numerous buildings attributed to him covering a wide range of date. If it is taken for granted that he was old enough to have been architect of Kirby, of which he has left on record that he laid the first stone in 1570—three years before the birth of Inigo Jones—he must have been advanced in years, and yet, apparently, full of energy in 1623, when the house was built in Chelsea for Sir John Danvers, and Jones had already built the Banqueting House in Whitehall, for we learn from Mr. Godfrey "it seems certain that he was in Chelsea about 1623, when Danvers House was built (the plans of which were also made and perhaps designed by him), and it appears that he took the opportunity of measuring Beaufort House." In all probability he was then residing in St. Martin's-in-the-Fields, and it would have been fairly easy to visit the neighbourhood of Chelsea. In view of the character of the drawings, and without independent confirmation of modern attribution to Thorpe of one single mansion of so many delineated in his collection, it is difficult to arrive at a conclusion that he made the design in this instance of Danvers House, and most probably the house was simply measured for record—which the notes on the plans would bear out—just in the same way as Beaufort House. Very soundly Mr. Godfrey holds that "Thorpe was not necessarily the designer of all the plans in his collection; he seems to have measured up houses as he came across them, and sometimes he failed to give all the particulars with accuracy."

HARRY SIRR [F.]

Books Received.

Portland Cement: Its Manufacture, Testing, and Use. By D. B. Butler. 8s. Lond. 1913. Price 16s. net. [E. & F. N. Spon, Ltd., 57 Haymarket.]

Building Supervision. By George W. Grey, Licentiate R.I.B.A., P.A.S.I. 8s. Lond. 1913. Price 2s. 6d. net. [E. & F. N. Spon, Ltd., 57 Haymarket.]

Drainage and Sanitation: A Practical Exposition of the Conditions Vital to Healthy Buildings, their Surroundings and Construction, their Ventilation, Heating, Lighting, Water and Waste Services. By E. H. Blake. Demy 8s. Lond. 1913. Price 10s. net. [B. T. Batsford, 94 High Holborn.]



9 CONDUIT STREET, LONDON, W., 27th September 1913.

CHRONICLE.

Programme of Sessional Meetings, &c., 1913-14.

- Nov. 3. President's Opening Address.
- Nov. 17. The New Wesleyan Hall: Paper by Mr. H. V. Lanchester [F.].
- Dec. 1. Business Meeting.
- Dec. 15. The Repair of Ancient Buildings: Paper by Mr. W. A. Forsyth [F.].
- Jan. 12. Business Meeting.
- Jan. 26. London Traffic Problems: Paper by Colonel Sir Herbert Jekyll, K.C.M.G. Announcement of award of Prizes and Studentships.
- Jan. 27.-Feb. 9. Exhibition of R.I.B.A. Prize Competition Drawings.
- Feb. 9. President's Address to Students; Presentation of Prizes and Studentships.
- Feb. 23. London Railway Stations: Paper by Mr. Paul Waterhouse [F.].
- Mar. 9. Business Meeting: Election of Royal Gold Medallist.
- Mar. 23. On Borrowing in Architecture: Paper by Mr. L. March Phillipps.
- Apr. 6. Professional Practice and Conduct: Paper by the Practice Standing Committee.
- Apr. 20. London's Bygone Building Acts and the Development of London: Paper by Mr. W. R. Davidge [A.].
- May. 4. Eightieth Annual General Meeting.
- May. 18. The London Society and its Aims: Paper by Mr. T. Raffles Davison [Hon. A.].
- June 8. Business Meeting.
- June 22. Presentation of the Royal Gold Medal.

The Construction of Belfries: Effect of Vibration on Buildings.

The Science Committee of the Royal Institute have under consideration the subjects of:

- (1) The construction of belfries.
- (2) The effect of vibration on buildings.

In view of the increasing use of heavy road traffic and machinery, and their injurious effect on buildings, the Committee are desirous of collecting useful data and information, with a view to the issue of a guiding memorandum on the subject. Members and Licentiates of the Royal Institute are invited to forward any particulars or statistics—

- (a) As to the measured swing of brick, stone, and timber belfries, tall chimneys, or similar erections.

- (b) As to the amount and extent of vibration in buildings.

- (c) As to any precautions taken to deaden or minimise the effect of such vibrations or oscillations.

Particulars, drawings, or statistics would be greatly appreciated, and should be forwarded as early as possible to the Hon. Secretary, R.I.B.A. Science Committee, 9 Conduit Street, London, W.

New Public Offices—Board of Trade, &c.

The Commissioners of his Majesty's Works and Public Buildings propose to erect new Offices for the Board of Trade, &c., in Whitehall Gardens, S.W. There will be two competitions—the first, open to all British subjects, to consist of sketch designs; and the second or final competition. The Commissioners have appointed as Assessors the President of the Institute, Mr. Reginald Blomfield, A.R.A., and two Past Presidents, Sir Aston Webb, C.B., C.V.O., R.A., and Mr. John Belcher, R.A., who will select ten designs, or a less number if they think fit, the authors of which will be invited to compete in the final competition. The authors of the designs selected in the first competition will be invited to enter the final competition. In the final competition, for which four months will be allowed, the selected competitors will be required to send in plans, elevations, sections, &c., of a more complete and detailed character. They will be at liberty to make such reasonable modifications of the sketch designs as they may think expedient. Each selected competitor will be paid the sum of £300 provided he comply with all the conditions prescribed for the final competition. Subject to the approval of Parliament, it is intended that the architect selected in the final competition shall carry out the work, unless he is prevented by ill-health, or some other cause which might be reasonably considered to render him ineligible for the employment. Designs must be delivered to Mr. Coward at the Imperial College of Science and Technology, South Kensington, on the 29th December, or on one of the three days next following, between the hours of 8 a.m. and 4 p.m. Each design is to be accompanied by a descriptive report of the general scheme, materials, warming, ventilation, and lighting, together with an estimate of the cost of the design accompanied by the entire dimensions on which it is based. The building will be erected in two portions at such times and intervals as Parliament may determine. The Commissioners are advised that a building suitable to their requirements should be obtained at a cost not exceeding £280,000 for the first portion, and £290,000 for the second portion.

The object of the first competition being to obtain a good general scheme, only so much as is necessary to illustrate it need be given on the plans and in the report, as it is desired so far as

possible to save labour at this stage. The selected architect will be required, if requested, to revise his design and make such further drawings and sketches as may be necessary to meet the Commissioners' requirements. If no instructions are given to the architect to proceed with the building within twelve months from the date of the award, the architect will receive payment of £5,000, which will be inclusive of the £300 payable to him as a selected competitor. If the work is subsequently proceeded with, such amount will form part of his ultimate remuneration. The remuneration of the architect will be at the rate of 5 per cent. on his estimate of the cost of each part of the building, and payment will be made as follows:—£1,000 on appointment as architect; £3,000 on acceptance of tender for superstructure; £3,000 when half the contract sum for the superstructure has been paid to the builder; £3,000 on certificate of completion being given; balance on final certificate being given. A further payment of £1,000 to be made on account of the fees for the second part. In the event of the architect being instructed to proceed with the second part a similar payment of fees will be made, but the payment of £1,000 is to be taken as the payment on appointment. When the design has been approved by the Commissioners the architect is to proceed with the working drawings, details, and specifications, and his employment will be subject to a tender being obtained from an approved builder for the erection of the building (first portion) for a sum which, together with the estimated cost of all other services necessary for the completion of the structure, shall not exceed the above-mentioned sum by more than 10 per cent. The plans, drawings, specifications, and other documents relating to the works are to be the property of the Commissioners and be deposited at the Office of Works, and the architect must at his own expense make all tracings and copies of plans, drawings, and other documents which may be necessary for the conduct of the works. The Commissioners will appoint a surveyor to prepare the quantities, and the architect may also nominate, if he should so desire, a second surveyor to co-operate in the preparation of the quantities. The Commissioners will also appoint a clerk of works.

A copy of the instructions and conditions relating to the competition, together with plan of site and the form of agreement to be entered into by the selected architect, may be consulted in the R.I.B.A. Library.

Proposed New Government Buildings, Ottawa.

Designs are invited in a preliminary competition for the erection of Departmental and Courts Buildings. From the designs submitted in this preliminary competition six will be chosen by the assessors, and the authors will be invited to submit more mature designs in a final competition, for which the five unsuccessful competitors will each

receive an honorarium of 3,000 dols. The author of the design placed first by the assessors will be entrusted with the work, which the Government intends carrying out at once. The competition is limited to British subjects practising in the British Empire. The Government has appointed Mr. T. E. Colcutt, Mr. J. H. G. Russell, and Mr. J. O. Marchand as assessors to act in its behalf. The designs in the first competition must be delivered in Ottawa (carriage paid) not later than 12 noon on 2nd January, addressed to Mr. R. C. Desrochers, Secretary, Department of Public Works, Ottawa. Conditions for both competitions may be had on application to the Secretary, and at the office of the High Commissioner for Canada, 17 Victoria Street, S.W.

Intimation has been received from the Office of the High Commissioner that the Department of Public Works at Ottawa has extended the date for receiving inquiries from competitors to 30th October.

The Development of Shop Architecture.

In an interesting article under the above heading in *The Times* of the 24th inst. credit is given, and justly given, not only to the architect, but to the shopkeeper and his customers as well, for the marked improvement which has taken place in shop architecture in London and other of our cities in recent years. The increasing number of highly educated men and women who are taking up posts as heads of commercial enterprises; the demand of the public that its shopping shall be done in pleasant conditions; the growth of knowledge and experience amongst architects in the treatment of commercial architecture; the spirit of reasonableness which, on the whole, has manifested itself throughout the discussion on the rebuilding of Regent Street Quadrant—all these, observes the writer, are so many grounds for hoping that the reckless disregard for beauty which marked shop architecture in the nineteenth century will give way to a recognition of the fact that a shop need not be ugly in order to be commercially attractive. Whiteley's new premises, Selfridge's, Warings', Debenhams and Freebody's, among the large "stores," are all cited as highly successful solutions of the problem how to handle the large plate-glass window. Coming to the smaller shops, the article says:—

Fortunately the architect can in many cases reckon upon the sympathy of the best class of tradesman. It has now come to be realised that the better goods are in quality the more important it is that they should be shown in an artistic setting, and, further, that such goods are shown at an actual disadvantage if they are crowded too much together. The two hundred yards or so of Old Bond Street between Piccadilly and Old Burlington Gardens contain four examples of first-rate shop architecture beyond which it is not necessary to go. The first example is the tobacconist's shop of Messrs. Sandorides, with its four exquisitely moulded arches and the rich ironwork which fills the upper part of these arches. Such a design, of course, cuts off a good deal of light, but it has to be remembered that in such

a shop an uninterrupted light is not a primary consideration. The second example is the shop of Messrs. Duveen. The elegance and richness of the French woodwork which forms its frame are exquisite, and though the windows are often bare of any goods whatever, the handsome panelling leaves one almost indifferent as to whether any priceless *objets d'art* are being shown or not. The shop of Messrs. Crichton next door is the third illustration. This shop is really a masterpiece on the part of the late Mr. Flockhart. On the ground floor the design is almost identical with that of Messrs. Duveen's shop, and the treatment of the first floor, while differing in detail, resembles its neighbour in general effect. In the two stories above the design is entirely different. The result is at once charming and dignified, and is an admirable illustration of how an architect, without sacrificing individuality, can make his design suitable to its surroundings. The last example is the perfume shop of Messrs. Atkinson. The deliberately massive appearance which has been given to the building by its stone casing and the comparatively small size of its mullioned windows suggest somehow an idea of cool fragrance which is thoroughly appropriate. In each of these, and in many other examples which could be given, the predominant characteristic is a certain rich refinement, which blends so quietly with the general surroundings that its full beauty is not always recognised at a first glance, but, when once apprehended, is more and more appreciated.

Architectural Courses at the Westminster Technical Institute.

The Westminster Technical Institute was established in 1890 by the Baroness Burdett-Coutts, and was presented by her to the London County Council in 1900 in order that the Council might continue the educational work then being carried on in the Institute. The Westminster School of Art, established in the Royal Architectural Museum, was transferred to the Westminster Technical Institute in 1903, and now forms an integral part of the Institute. A new building, containing well-equipped studios, lecture and classrooms, drawing offices and workshops, was opened in 1908 as an addition to the old building, to provide greatly increased and improved accommodation for the various art and technical classes.

Architectural group courses of instruction have been arranged at the Institute to enable students engaged in the offices of architects, surveyors, &c., to follow out a systematic course of study extending over several years, under the direction of lecturers and leaders who have had wide practical experience in their profession. The courses may be varied, with the approval of the Principal, to meet the needs of individual students. Homework is set each week, and arrangements are made during the session to visit buildings in course of erection, museums, and other places of architectural interest. Students preparing for the R.I.B.A. Final Examination specialise in Design or in Construction, and take higher classes in Design or in Structural Engineering respectively. Courses are provided in Quantities, in Valuation, and in Building Laws. The course of Architectural Drawing and Design is under the direction of Mr. Matthew J. Dawson [A.]; History of Architec-

ture, Mr. W. T. Benslyn [A.]; Building Construction, Mr. W. J. Wilsdon [*Licentiate*] and Mr. F. C. Webster [A.]. Full particulars may be obtained from the Principal, Mr. J. Stuart Ker, B.Sc., Vincent Square, S.W.

London University Extension Lectures.

Lord Curzon has joined the Committee for the London University Extension lectures on architecture this session. They include two courses, one on "Ancient Architecture" and another on "Renaissance Architecture," by Mr. Banister Fletcher [F.]. The lectures, illustrated by lantern slides and models, will be delivered in the British Museum and the Victoria and Albert Museum respectively. The first will be on Thursdays at 4.30, beginning on October 2, and the second on Mondays at 5, beginning on October 6. Particulars may be obtained from the Hon. Secretary, 10 Woburn Square, W.C.

The Chadwick Public Lectures.

The Chadwick Trustees have arranged for a course of three public lectures dealing with Practical Problems of Housing Reform, to be delivered in Glasgow by Mr. W. E. Riley [F.], Superintending Architect to the London County Council, on the 1st, 2nd, and 3rd October. The subjects of the lectures are (1) Unhealthy Areas; (2) Unhealthy Houses, Improvement Schemes, and Lodging Houses; (3) Cottage Estates. Under the same auspices, on 23rd and 30th October and 6th November, Dr. Leonard Hill will lecture at Bristol on the Physiological Principles of Heating and Ventilation; and on the 4th, 11th, and 18th November Sir George Newman, M.D., Chief Medical Officer of the Board of Education, will lecture at the University of London, South Kensington, on the Place of the Open-Air School in Preventive Medicine. Information concerning other Chadwick Lectures for 1913-14 may be obtained of Mrs. Aubrey Richardson, at the offices of the Chadwick Trust, 8 Dartmouth Street, Westminster. Inquiries regarding the Glasgow Course should be addressed to Dr. A. K. Chalmers, Medical Officer of Health, Sanitary Chambers, Glasgow.

Victoria and Albert Museum.

An official Guide has been provisionally appointed by the Board of Education for six months from the 1st October next, to conduct parties of visitors round the Victoria and Albert Museum. No charge will be made for his services, and no gratuities are to be offered. The Guide will start from the Entrance Hall at 12 noon and 3 p.m. daily, except on Sundays. Each tour will last about an hour, and various departments of the Museum will be visited. Details of the proposed tours will be announced later. The Guide's services will also be obtainable without charge by

special parties between the hours of 10 and 12 a.m. and from 4 to 6 p.m. on any week day, but four days' notice at least should be given. Application for such special guidance should be made either verbally to the doorkeeper at the main entrance or by letter addressed to the Director and Secretary, but applications in respect of parties of less than six or more than twenty should be made only by letter. It should be stated whether the party desires to make a general tour of the Museum or to visit some particular department. All applications for special guidance will be considered in order of priority of receipt. In accordance with the General Museum Regulations all parties will, as a rule, be limited to twenty in number. Children below the age of twelve years cannot be included in them, unless they come in classes in charge of their teachers.

East Africa Architectural Association.

The architects of British East Africa and Uganda have formed themselves into an Association with the above title. The officers for the first session are: President, Mr. R. M. Geater; Vice-President, Mr. W. M. Robertson; Hon. Sec. and Hon. Treasurer, Mr. Harold E. Henderson, Licentiate R.I.B.A., Box 80, Nairobi, B.E.A. (late Hon. Secretary of the York and Yorkshire Architectural Society); Council, Messrs. Le Roux, Tate-Smith, Gow, and Hurle Bath. The Legislative Council of British East Africa is to be asked to sanction a measure providing for the registration of architects in the country it administers, and application is to be made for alliance with the Royal Institute of British Architects.

Reinforced Concrete and its Uses.

The first of a series of illustrated articles dealing with the use of Concrete in Cotton Mills, from the pen of Mr. Harold Holt [A.], appears in the September issue of *Concrete and Constructional Engineering*. The author's aim is to indicate the direction in which reinforced concrete has been already adapted in cotton-mill buildings, to show why it has apparently not been further used, and to offer suggestions for its more extensive employment particularly in cotton-manufacturing buildings. Other articles in this issue include the second instalment of Mr. Kempton Dyson's criticism of the L.C.C. Reinforced Concrete Regulations; "Waterproofing Qualities of Oil-mixed Concrete," by L. W. Page, Director of the Office of Public Roads, Washington, U.S.A.; "Reinforced Concrete Glass Warehouse, St. Helen's"; "Concrete and Reinforced Concrete at the Leipzig Exhibition," by Dipl.-Ing. Philipp Rauer; "Concrete Cottages in South Wales"; "Cement and Concrete at the Royal Agricultural Show, Bristol," various new constructions in concrete, &c.

OBITUARY.

Sir Frederick Eaton, who had been Secretary of the Royal Academy for the past forty years, died on the 11th inst. at the age of seventy-seven. Sir Frederick was the editor of Murray's Handbooks on Egypt and South Italy, 1870-1880, and of an English translation of Thausing's Life of Albert Dürer. He was joint author with Mr. J. E. Hodgson, R.A., of "The Royal Academy and its Members, 1768-1830." At the funeral service, which took place at St. Mary Abbots, Kensington, the Institute was represented by the Secretary, Mr. Ian MacAlister, and a wreath was sent on behalf of the general body of members. Among Academicians present were the past Presidents of the Institute, Sir Aston Webb, R.A., and Sir Ernest George, A.R.A.

CORRESPONDENCE.

The Preservation of Ancient Monuments.

*The Society for the Protection of Ancient Buildings,
20 Buckingham Street, Adelphi, W.C.*

To the Editor, JOURNAL R.I.B.A.,—

SIR,—The Committee of this Society has had its notice called to the essay by Mr. Wm. J. Davies on the above-named subject which appeared in your issues of 14th and 28th June. The essay, which shows a most exhaustive study of the question of the preservation of ancient buildings, is a fine statement of the case and a most useful addition to the literature of the subject.

There is one point on which the essayist does not make himself quite clear. In paragraph 4 (v.) it seems to be suggested that forgeries of architecture are pardonable, if not admirable, as they can be detected. My Committee cannot think that this is what the author believes. Such a belief would lead one to accept a copy as a work of art, while at best it can only be very artful work.

Perhaps Mr. Davies intended to correct this misleading paragraph when he wrote the one numbered 6 (ix) in which this sentence occurs: "Any alterations or additions, therefore, necessitated by changing conditions, while harmonious with the main fabric, should bear the impress of the age and of the individuality of the artist." These words express clearly this Society's view of the right treatment of an old building where modern additions are essential, though it is the impress of the age, rather than the individuality of the artist, that is wanted. In fact, the individuality may very well be dispensed with, if such a thing is possible.—I am, sir, your obedient servant,

A. R. POWYS, *Secretary.*

Mr. FRANK T. VERITY [F.], who holds the appointment of Architect to the Lord Chamberlain's Department, has received the honour of election as Corresponding Member of the Société Archéologique de France.



BALDASSARE PERUZZI.

BALDASSARE PERUZZI OF SIENA : A BIOGRAPHICAL ESSAY, WITH
A CRITICAL DESCRIPTION OF HIS ARCHITECTURAL WORKS.

Essay submitted under the motto "Anti-Baroque," awarded a Certificate of Honourable Mention in the
Competition for the Royal Institute Essay Medal, 1913.

By J. HUBERT WORTHINGTON [A.], M.A.

THE importance of studying the personal element in Architecture has frequently been urged upon students, so that concentration on the life and work of so admirable a master as Baldassare Peruzzi should need no apology. There can surely be no more vital inspiration to the architect of to-day than whole-hearted reverence for outstanding genius, and Peruzzi has been aptly described by Mr. Reginald Blomfield as "the greatest architect of the Renaissance." Critical study of the period in which he lived is beset with many difficulties, for recent research has disclosed new facts and upset hitherto accepted theories. Buildings have been associated with certain names for centuries without adequate foundation, and the resulting confusion is a danger against which we must carefully guard; for though it is essential before forming judgment on the style and works of an artist to produce proofs in support of his claims of authorship, greater issues must not be forgotten in attempting to prove minor points.

The life and works of Peruzzi have not received the study, or been subjected to the research, that they deserve, and information has often to be gleaned in fragments, from slight allusions in general books. But the most conclusive evidence must always be his original drawings in the Uffizi Gallery at Florence, the Sienese sketch-book, and above all the study of his actual work. Drawings and photographs cannot indicate the subtle distinction that permeates the creations of this remarkable man. One must see the Italian sun bathe in rich warmth the mellow tones of his brick and terra-cotta in Siena, casting its crisp shadows on the broad wall surfaces; one must sit on the stone bench of the portico of the Palazzo Massimi at Rome to realise the wonder of the gradual curve, and one must caress his mouldings to feel their sensitive and exquisite refinement.

An artist should not be judged by standards non-existent in his own day. Baldassare Peruzzi is the child of his time. He belongs to that wonderful period which ranks with the greatest epochs of Athens and Rome in the stimulus it has given to thought. "Men opened their eyes and saw," and with fervid zeal wrestled with the problems of the world. As the Greeks of old commemorated their conquest over the barbarian in works of surpassing beauty, so the men of the Renaissance were filled with a passion to express their deliverance from mediæval darkness in terms of art. There is a spaciousness about the domed churches and airy saloons of the palaces and villas of these days, which comes not merely from a desire to revive the forms of classicism, but from the fact that they were built for men whose minds would admit no barriers or restrictions. Ancient Rome made its appeal to the men of the Cinquecento because of its vastness and adaptability, and because of the undeniable affinity which exists between the classic and the modern. In Rome the buildings of the classic period seem to be almost of our time. Their appeal is more direct, more compelling than that of mediævalism, and so it seemed to the great revolutionaries of thought who laid the foundations of the modern world. The Medici, the humanist popes, the cardinals, and an enlightened aristocracy gave the needed encouragement to scholars and artists. The splendour of the Courts of Florence and Milan in their turn gave way to the splendour of a revived papacy, for when Cardinal Giovanni dei Medici was elevated to St. Peter's Chair the centre of art and culture was transferred from Florence to Rome. Rome did not produce her own artists, but from all Italy they heard the ever-fascinating call of the Eternal City.

Life was an art in those golden days of the Renaissance. Frescoes have preserved the beauty of the costumes, the trappings, and the pageantry of an age in which there was the "continual stir and motion of a comely human life." Beneath shady avenues of ilex and stone pine, to the soft plash of falling water, or in the painted halls, men argued the new theories of life and philosophy, science and art, while pages played soft music on inlaid lutes and viols cunningly wrought, or brought luscious fruits and sparkling wine in vessels chased by the skilled goldsmith's hands. The spirit of humanism led to a delight and rapture in all that concerned man, and "they found in a beautiful body a soul created for nobleness, gifted with a sense of beauty." It has been called an age of brilliant sins and exquisite amusements. Fancy delighted in birds of gorgeous plumage, and in apes and strange animals of every sort, and a fastidious taste made beautiful even the meanest of household utensils.

This was the environment that produced such men as Lorenzo dei Medici and Brunelleschi, Ludovico Sforza and Leonardo, Leo X. and Raphael, Agostino Chigi and Peruzzi.

Now, what is the position that Peruzzi holds in the history of Renaissance architecture? He comes at the climax of the style in Italy. The reckless profusion of the North had been modified and restrained; architectonic qualities had triumphed over the purely decorative, and the charming experiments of the early Florentine phase had matured into a perfected type. The young Baldassare arrived in Rome when Bramante was at the summit of his career, and though there is little but the exquisite perfection of a tempietto and the grace of a small cloister which can with certainty be ascribed to Bramante in Rome, the fiery zeal with which he pressed on the work at St. Peter's and the Vatican had won for him an incontestable position and influence. He was the presiding genius of a brilliant coterie from among which his two principal assistants, Baldassare Peruzzi and Antonio da San Gallo il Giovane, stand out pre-eminent. Bramante, whose right hand was paralysed, must have relied on and influenced these two talented young men to an unusual degree. The same influence must have been strongly felt by others, too—by Raphael, who was probably his kinsman, and whose architectural work has received attention of late years, by Giulio Romano, and by Jacopo Sansovino, who went to Venice after the sack of Rome. In the work of all these men are found many common characteristics, so that they form as definite a

school of design as that which grew up at Florence under Brunelleschi, who had died thirty-five years before Peruzzi's birth. It is interesting, in order to realise what a galaxy of great men were living at the same time, to note that when Peruzzi at the age of twenty-eight was building the Farnesina in 1509, Bramante was sixty-five and his friend Leonardo fifty-seven; Michael Angelo was thirty-four, and Raphael, San Micheli, and Antonio da San Gallo il Giovane were two, three, and four years younger than Peruzzi respectively. Whether the Palazzi Cancelleria and Giraud are really by Bramante is of no great moment here, but this type of façade—the outcome of Alberti's Palazzo Rucellai at Florence—strongly influenced Peruzzi in his earlier work. It will be found, however, that by degrees he became dissatisfied with the dry, illogical treatment of the shallow applied pilaster in superimposed stories, and with Antonio da San Gallo reverted to the Riccardi type, which relies for its effect on pure fenestration crowned by a noble cornice.

Though Peruzzi was intimately associated with the men of his day, in his designs are found definite traits and a distinction of style that mark them out from among those of his contemporaries. But the perfection of the Renaissance in Italy was short-lived; Peruzzi's work, still full of the freshness and vitality of a style in its early development, was followed by a rapid



MADONNA AND SAINTS, SANTA MARIA DELLA PACE, ROME.

withering. In Vignola, with all his brilliance, we find the first symptoms of decay; Michael Angelo, less happy in this art, showed his feeble imitators the short cuts to decadence; Palladio by an inordinate passion for antique standards made for sterility by insisting on the observation of slavish rules and ordinances; the exponents of the Baroque, though possessed of talent and gifted with an amazing sense of display, forgot the limitations of the art of architecture, and often perpetrated monstrosities of unbridled license.

To return to Peruzzi. He was one of many intellectual giants peculiar to the early

and culminating periods of the Renaissance, who combined scientific genius with the highest æsthetic sense. Like Leonardo he was painter, mathematician, and astrologer; like Bramante, a designer of pageants, and, moreover, the inventor of movable scenery; like Michael Angelo, San Gallo, and San Micheli a great military engineer; and like Raphael a designer of tapestry and an archæologist. As Michael Angelo was first architect among the painters, so Peruzzi was first painter from among the architects.

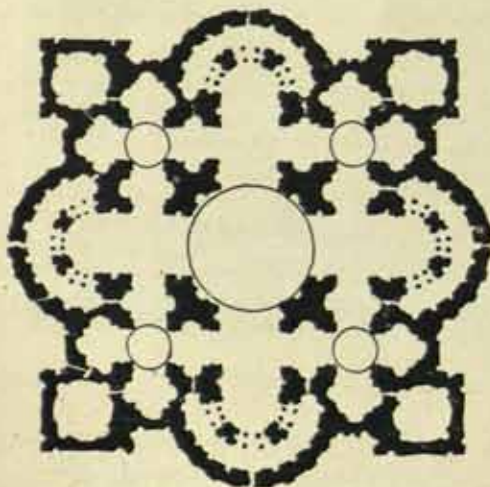
Baldassare di Salvestro di Salvatore Peruzzi was born on 7th March, 1481, his father being Giovanni Peruzzi, probably a weaver of Volterra, though Vasari says he was a Florentine of noble birth. Other towns have claimed Baldassare as their own. But he always calls himself "Senese," and with Siena his life is closely connected. The old Florentine practice of apprenticing the artist to the bottega of the goldsmith, thence to branch off to the greater arts, lingered on in Siena long after specialisation had become the vogue in Florence, and it seems that Peruzzi began his artistic career with an *orefice*. At a very early age, however, he was helping Pinturicchio, that prince of decorators, on the Chapel of San Giovanni in Siena Cathedral, in 1501, and not long afterwards he went to Volterra to paint a chapel. Here by good luck he made friends with Piero da Volterra, who took him to Rome in 1503. Thus, at an impressionable age, the young Baldassare obtained the training that made all the great Renaissance masters, among the monuments of Rome itself, where he threw off the immaturity of Sienese art and became the most classic and scholarly of architects.

Whilst engaged upon the decorations of the choir of Sant' Onofrio, together with other fresco commissions in and around Rome, he had time to study and measure Roman antiquities, with that same enthusiasm that caused Fra Giocondo of Verona to be frequently whipped by order of his prior. But his grasp of the antique rose so far above that of the archæologist that he became more creative than any architect of his time.

His first architectural work of importance was the villa which he built in Trastevere for his fellow-townsmen, Agostino Chigi, the Mæcenas to whom both Raphael and Peruzzi owed a large measure of their success. The Farnesina was finished in 1511, from which time until his death Peruzzi led a laborious life; but though he carried out much work in an architectural practice of

only some twenty-six or twenty-seven years, his quiet, simple nature was imposed upon, and he has been invariably looked upon as a child of misfortune.

He was probably in Rome from 1503 to 1522, and on 1st August, 1520, he was formally elected architect to St. Peter's, as Raphael's successor, with a salary of 150 ducats a year. He held the post till 1527, and again from 1530-31, and from May 1535 until his death in January 1536. Peruzzi had been closely associated with Bramante, but Serlio gives to his master every credit for the beautiful plan that he has preserved for us in his book. His indebtedness to Bramante was of course inevitable, but it will be noticed that his plan shows a degree of stability and concentration that was lacking in all the earlier schemes. Around the main central cupola, 158 feet in diameter, are grouped four smaller ones, each 48 feet in span. The four extremities of the



PERUZZI'S PLAN FOR ST. PETER'S, ROME.
From Serlio.

church have apsidal terminations with semicircular colonnades that give a sense of scale and play of mystery that is so lacking in the existing building, whilst at the corners are square sacristies.

It is not possible to point to actual work by Peruzzi in the Great Basilica, but we know that he spent much time and thought on the difficult and thankless task of repairing piers and foundations that had proved to be too weak. It is a great misfortune that the most immense building of modern times could not have been carried out by an artist who had in him the power to create the most beautiful as well as the largest classic church of Christendom. Political calamities and the deaths of popes proved a continual hindrance to him, and eventually his career came to an untimely end at the hands, it is said, of a jealous rival.

But to return to events which took place while he held the position of architect-in-chief. In 1522 a series of wanderings began. He went to Bologna, and prepared designs for the completion of San Petronio, which are still to be seen in the sacristy. One of these designs shows a singularly unhappy effort in the "German style," and another a wonderful section in perspective through a mighty dome. He was soon recalled to Siena to design and superintend the fortification of the city, and returning again to Rome, remained there until the unhappy year of 1527, when the army of the Constable of Bourbon took the city by assault, while the powerless Pope cowered in the Castle of St. Angelo. Benvenuto Cellini, in his incomparable manner, tells us how he killed the Bourbon. The invaders were under no control, and it is best not to dwell upon the misery of the fate of Rome. The excesses of the Bourbon's savage troops exceeded those of Alaric and Brennus. For days, murder, cruelty, lust, pillage, and desecration held Rome relentlessly. "Never," says Ranke, "never did a richer booty fall into the hands of a more terrible army; never was there a more protracted and ruinous pillage."

"Poor Baldassare," Vasari tells us, "was made prisoner by the Spaniards, losing all that he possessed and suffering torture, as his aspect was grave and noble, and they thought him some great prelate in disguise, or some other great person able to pay a heavy ransom." Subsequent robberies bereft him of all he possessed but a shirt, in which scanty clothing he arrived in his native town.

The two following years were spent in fortifying Siena and executing certain private commissions there, and in 1529 he was before the walls of Florence with the Siennese and papal armies, helping to reduce the walls that Michael Angelo had built. He then returned to Rome to spend the last few years of his life on the building of his masterpiece, the Palazzo Massimi.

Vasari quaintly comments on the ungratefulness of his employers, and describes the close of his life as follows:—

Thus Baldassare found himself in his last years, old, poor, and burdened with a family. After having lived a well-regulated life he fell grievously sick. When Paul III. heard this, he sent 100 scudi to him by Jacopo Melighi, accountant of St. Peter's, tardily recognising the loss which would be caused by the death of such a man. But Baldassare grew worse, or else was poisoned by some rival who desired his place, which brought him 250 scudi, a thing discovered late by the physicians. He died regretting life rather on account of his poor family than of himself, for he left them badly provided for. He was much lamented by his children and friends, and was buried in the Rotunda near Raphael, being followed to his grave by all the painters, sculptors, and architects of Rome.

The fame of Baldassare Peruzzi was greater after his death than during his life. Among his many pupils his son Sallustio and Sebastian Serlio were the best known: Francesco da Siena, Antonio del Rozzo, and Giovanni Battista Peloro were Siennese architects: Riccio of Siena and Virgilio of Rome were painters.

But Peruzzi influenced greater men than these, particularly Antonio da San Gallo il Giovane, Giacomo Barozzi da Vignola, and Jacopo Tatti or Sansovino. Mr. Reginald Blomfield says that "almost any important building by Baldassare Peruzzi—such, for instance, as the Palazzo Massimi alle Colonne at Rome—shows a more intimate grasp of the architecture of the past than the whole of Palladio's books and buildings put together." What might not our English Renaissance have been had Peruzzi rather than Palladio been its inspiring genius!

ROME.

In enlarging upon Peruzzi's architectural works in detail it is best to begin with a group of three buildings which belong to the earlier stages of his life in Rome, the Farnesina, the Cappella Chigi, and S. Eligio degli Orefici. Although these have all been ascribed by Geymüller to Raphael, the usually accepted assumption that they are by Peruzzi has been followed.

Agostino Chigi, for whom the first two of these buildings were built, is so remarkable an individual that a small digression will not, perhaps, be out of place here. A fellow-townsmen of Peruzzi, he was born in 1465, and before his fortieth year had made himself the most powerful financier in the world. Besides the central house in Rome, he had a hundred branch banking establishments in Italy, and others abroad at Constantinople, Alexandria, Cairo, Lyons, and London. Twenty thousand men were in his employ, and a hundred vessels flew his flag. In addition he possessed farms, castles, and immense property, his plate and jewellery were fabulous, and his stable contained horses of unrivalled breed. Chigi will always rank as one of the greatest collectors and art patrons of the world, and a host of artists enjoyed his enlightened protection and patronage. In his character were mingled shrewdness and generosity. He died in 1520.

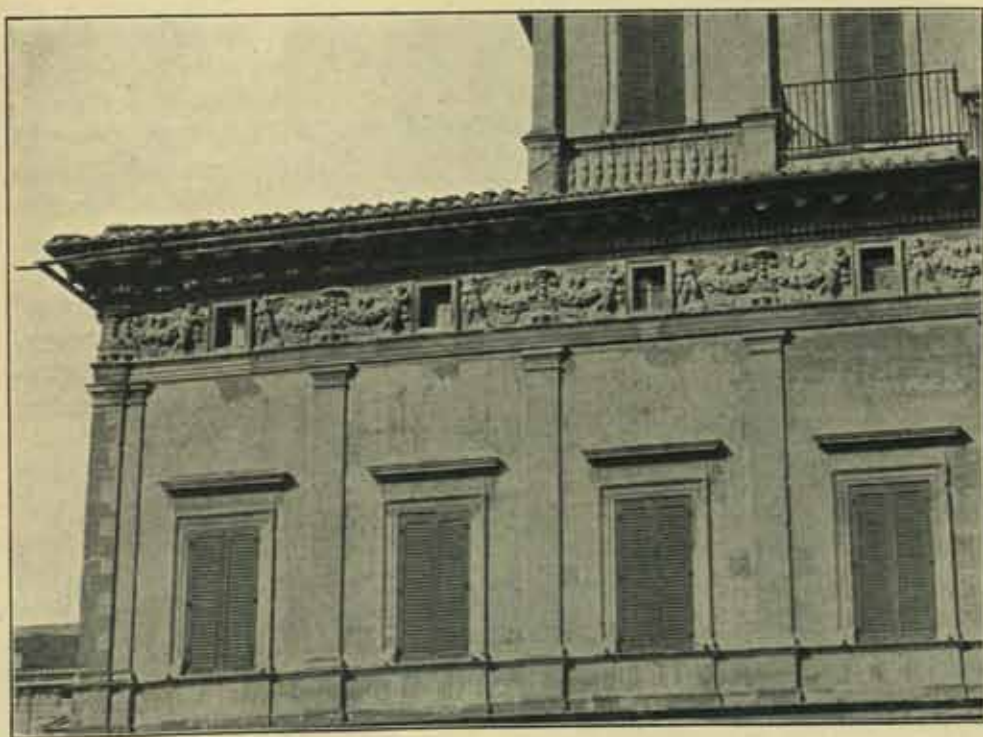
The famous villa that he built between the Monte Gianicolo and the Tiber is interesting as illustrating Renaissance life, painting, and architecture, and as a pleasure-house *par excellence*, where he entertained large and distinguished assemblies with more than royal magnificence, and the renown of his banquets remains to this day.

The ill-kept grounds and glazed arcades of the Farnesina, as the villa is now called, make it difficult to realise the original splendour and beauty of the building and its surroundings. But once all the "garden magic" of Italy was here: shady avenues, trees laden with luscious fruits, gay parterres, and the splash of fountains. No doubt, too, many of the statues, sarcophagi, garden ornaments, and marble benches from the Horti of ancient Rome, which now are the treasures of the museums, stood amid the shade and sunshine of Agostino's grounds. Here Chigi's brilliant guests wandered to and fro, passing from the gardens to the cool open loggia, decorated with Raphael's Story of Psyche, culled from Apuleius' charming fable. The adjoining gallery of Galatea, called after the same master's fresco, contains decorations by Sebastiano del Piombo, Daniel da Volterra, and Baldassare Peruzzi himself. Giulio Romano and Giovanni da Udine also worked here. On the piano nobile is another suite of spacious saloons, famous not only for Sodoma's delightful fresco of Alexander and Roxana, but for the large salon that presents so striking an example of Peruzzi's decorative power. On the walls are painted columns of black marble in consummate perspective, through which are represented glimpses of the landscape that actually existed round the building. The principle may be open to criticism, but may be condoned here because of the resulting sense of openness that so befits a pleasure-house. The putti in the frieze and the flat, richly coffered ceiling, coloured in blue and gold, heighten the effect of this remarkable and little-known room.

In criticising the architecture of this building it must be borne in mind that it was primarily intended for the display of paintings. Not only were the saloons and loggie rich with frescoes, but even the walls of the façades themselves. They are built of brick plastered, with pepperino dressings. In its general lines the building has a simplicity and breadth of mass that are admirable, and it is a great advance upon the Palazzo Cancelleria. The two wings project boldly, and are excellently proportioned to the connecting block with its deeply recessed arcade; internally also it is beyond reproach, so successfully is it adapted to its purpose. The details, however, do not display the maturity found in the master's later work. In questioning the heaviness of the crowning entablature, which is about half the height of the pilaster below it, the fundamental difficulty of placing order above order on a façade presents itself. Is it legitimate to have an entablature that is in proportion to the whole edifice, but out

of proportion to its attendant column? Peruzzi himself solved the question, as Brunelleschi and Michelozzo had done years before, by abandoning applied orders in most of his later work. These shallow pilasters do not justify their existence. They may have been kept low in relief in order to help the paintings, but how much better would it have been had the surface been unbroken by these attenuated strips. The capitals are far removed from Doric proportion and detail, and the single pilasters cutting into two halves the ends of the projecting wings are unfortunate.

The most remarkable feature of the exterior is the dash of running richness in the deep terracotta frieze that so effectively binds in the whole design. Purists may object to the piercing of it with tiny windows, but this is a motif which in Peruzzi's hands became an original and charming characteristic. The ornament consists of vigorously modelled putti holding garlands hung from candelabra. This is the right place in which to insert enrichment, high up, in the shadow of the



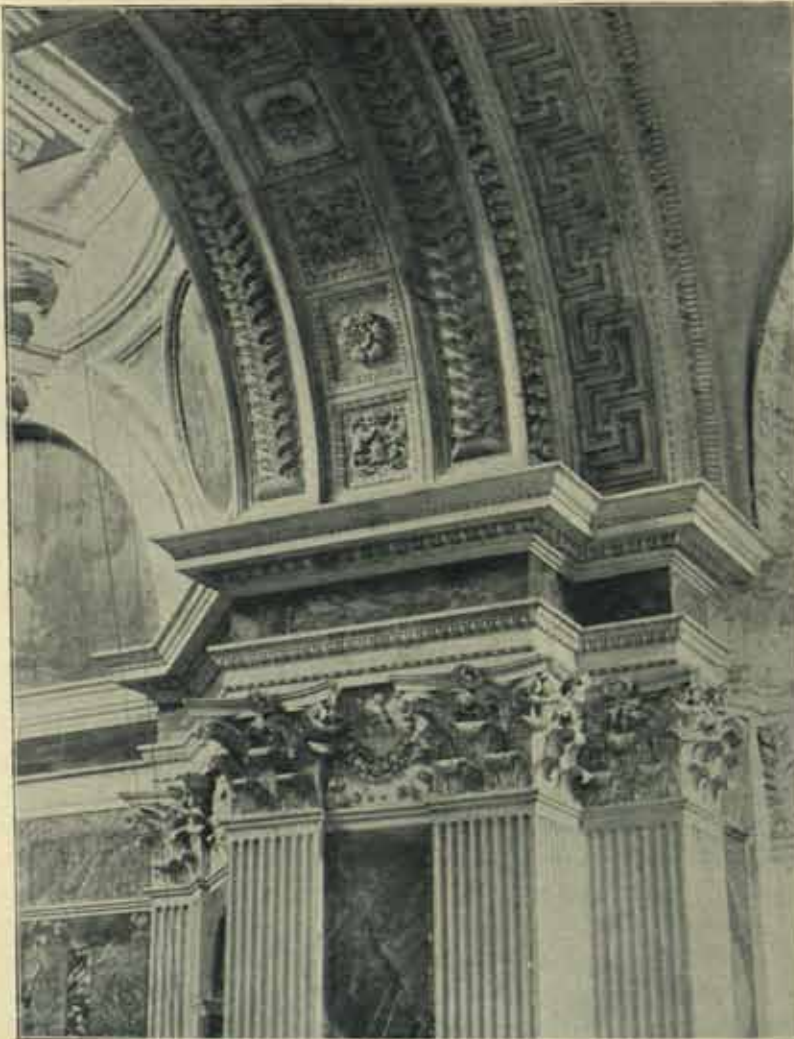
FARNESINA, ROME.

cornice. Nothing could be simpler than the windows, which in their proportion and mouldings proclaim Peruzzi, and the sunk panel in the frieze is also found on his Casa Pollini at Siena.

Baron von Geymüller has, at great length, attempted to deprive Baldassare of this building and assign it to his favourite Raphael. It would be superfluous to recapitulate here his many arguments, which Francis Bedford has answered so convincingly: suffice it to say that his proofs are not generally accepted, and that he seems to have left out of account the many undeniable analogies to Peruzzi's own work that are evident in the building itself. Apart from instances mentioned above, the doorway with its deep frieze, enriched with ornament almost identical with that in the upper order of the cortile of the Palazzo Pietro Massimi, is strong evidence. A further proof is offered by the porch of the little church of S. Maria in Domnica on the Caelian, which was erected by Leo X. and is an early design by Peruzzi. An authentic drawing in the Uffizi has dismissed the theory held by some that Raphael designed this porch. It consists of an open arcade

of five arches combined with a Doric order, which closely resembles the loggia of the Farnesina. The pilasters are in one case nine and in the other nine and a half times their width in height, an unusually attenuated proportion, and the spacing corresponds with that of the upper story of the villa. No less alike is the general character of the mouldings.

The two upper stories of the Palazzo Ossoli in the Via de' Balestrai show a close resemblance to the Farnesina also, not only in general proportion and treatment, but in the spacing of pilasters and profiles of mouldings, as is seen in the capitals in the cortile. This little palace possesses in



CAPPELLA CHIGI, S. MARIA DEL POPOLO, ROME.

the upper portion of its façade the faults of the Farnesina, but it has a really admirable basement story and a simple direct plan. Judging from the style it belongs to an early period in Peruzzi's career, and its authenticity is proved by a plan and two sections in the Uffizi.

The little Cappella Chigi in Sta. Maria del Popolo is an almost perfect example of Renaissance art at its best. Nothing could be simpler than the general scheme, a small unequal octagon on plan, with niches in the angles, surmounted by a hemispherical dome, raised on an attic pierced by windows. It forms a mine of ornament and decoration of the highest and most refined quality, and the beauty of form and execution is heightened by a charming scheme of colour. The effect of the deep entrance arch set within an outer ring is superb: the mouldings and their enrichment,

all in white marble, are Greek in their perfection, though the capitals and their intermediate panels are a little overpowering; the plain bands of friezes and attics, and the walls, are in delicately tinted marble, mainly portasanta; the compartments of the dome are no less beautiful in their arrangement and enrichment than the famous mosaics they frame, carried out from Raphael's cartoons. These mosaics would in themselves make the chapel famous. They are on a blue ground, so that as one looks up, the ribs of the panels seem to form an open framework to the sky. From the seeming hypaethral opening in the eye of the dome, God the Father

surrounded by cherubim looks down from heaven on the worshippers beneath. The roundels in the pendentives and the eight compartments of the attic are also from Raphael's designs, as is the statue of Jonah in the niche, executed by Lorenzetto Lotti.

The architecture of this building has also been attributed to Raphael, but Letarouilly, Lalande, and our English authorities are convinced that it is by Peruzzi. If he was architect of the Farnesina, which was completed just before this chapel was begun, and where Raphael was in charge of the decoration, it is natural to assume that they also worked in collaboration here. Credit must certainly be given to both; and though Vasari states that "he designed the architecture of the stables of the Chigi, and Agostino's Chapel in the Church of Sta. Maria del Popolo," the fame of the mosaics and Peruzzi's over-modest disposition might easily have led so gossipy and unreliable an authority to make a mistake. To Peruzzi the execution of the architecture of this chapel is due beyond all doubt. It has been pointed out that the Corinthian order is the same as that followed by Serlio, who admits that his facts are based on Peruzzi's theories and researches. The setting of the enriched arch within the arch, and the unequal sizes of ceiling coffers are both found in the Palazzi Massimi. In the same are found also similar frets, guilloches, and ornamentation; but the example which seems to give the most conclusive proof by comparison is the High Altar in Siena Cathedral, in which panels of coloured marble are set in exquisitely moulded frames of white, and the whole character of mouldings and enrichments corresponds. This Greek-like refinement of egg-and-dart and leaf-and-tongue and acanthus foliage is found only in the work of one man. The mosaics of the chapel were completed in 1516.

S. Eligio or S. Alo degli Orefici, the dilapidated little church which stands in Via Giulia near the Tiber, is similar in type to the Cappella Chigi. In plan it consists of a Greek cross, with arms of slight projection, and an apse to the east. The interior is well proportioned, its height being two and a-half times the diameter of the hemispherical dome, which is raised on a low drum once pierced by four small eyes, but now lit by larger windows. The lantern remains intact, and harmonises well with the simple dome, though subsequent alterations of the Baroque period have marred much of the beauty of this simple little building. Contemporary drawings, probably by Sallustio Peruzzi and an unknown French architect of the sixteenth century, have preserved the original design, which both on the interior and the exterior shows a severe restraint with none of the rich decoration found in the Cappella Chigi. The date of erection is given as 1509, the same year as the commencement of the Farnesina. Geymüller reproduces a drawing which he takes to be by Sallustio, Peruzzi's son, on which is written "S. Alo degli Orefici in strada Julia inverso il fiume opera di Raffaello da Urbino." This drawing shows a plan and details of the Doric order. In contradiction to this there is a drawing of the dome and lantern by Aristotile da San Gallo which distinctly bears the words "Di M^o Baldassare da Siena chiesa delj Orefici in Roma di pezi lavorati di pietra piana." The argument is indeed involved, and is an instance of the difficulty of proving the authorship of the buildings of the period. It is known that Aristotile was one of Raphael's chief architectural assistants, and he would not readily accredit a building of his master to Peruzzi, so that the dome and lantern, at any rate, must be by the latter. The close likeness to the Cappella Chigi would seem to indicate that the same architect designed both, and the Greek cross type was a particular favourite with Baldassare.

Peruzzi's earlier work was strongly influenced by Bramante, but he gradually freed himself, and three buildings, a casino and two palazzi, are interesting as showing the intermediate stage which culminated in the Palazzi Massimi.

The Vigna di Papa Giulio is a still unfinished casino that was begun by the Cardinal Antonio Fabriano di Monte, on his property outside the Porta del Popolo. He died in 1533, and his nephew and heir became also Cardinal di Monte, and left Rome as Legate at Bologna; but though elected Pope Julius III. in 1550, he never completed the Casino of the Vigna, but started

de novo the beautiful villa adjoining that bears his name. There is a particular distinction attached to this dilapidated and uncompleted building. It has an air of quietness and repose, with its expanse of plain brick wall on the ground floor, broken only by the great rusticated portone; remarkable also is the generous spacing of its simple windows and the graceful central loggia, and the unusual treatment of the curved truncated corner. The plan has a quaint originality. A barrel-vaulted carriage-way leads to a strange little court, in the form of an elongated hexagon, the loggia of which once looked upon a water-garden, traces of which remain. Although there is but one apartment on the ground floor, a spacious stairway leads to a long suite of rooms above.

In his *Life of Jacopo Sansovino*, Vasari tells us that "he began outside Rome the Vigna of the Cardinal di Monte, a large building situated by the Acqua Vergine." Now, in the building as it stands, there is nothing which corresponds with the known works of the younger Sansovino, who left Rome for Venice after the sack of 1527, and tradition has always ascribed it to Peruzzi. Internal evidence strongly corroborates the assumption. The Corinthian pilasters are almost identical in detail with those in the Cappella Chigi; the mouldings bear the impress of Peruzzi's individuality, and the general scheme recalls the Villa Mielì, near Siena, which has a similar broad treatment of façade, similar pilasters at the corners, and a similar rusticated portone. It is true that the angle pilasters would in both cases be better away, but they are interesting as showing how Peruzzi gradually eliminated the applied orders altogether.

A small palazzo in the Via Giulia, standing between San Giovanni Fiorentini and the Palazzo Sacchetti, is an authentic work of Peruzzi, for his detailed drawings of it are to be seen in the Uffizi at Florence. It belongs to his middle period, and on a marble tablet over the central door is the inscription

COSMO MEDICI—DUCI FLOREN II—
PACIS ATQUE JUSTITIAE CULTORI—

The simple astylar façade of stuccoed brick with stone dressings is a piece of well-ordered fenestration, but no traces are now left of the paintings which once gave to it a special interest. In 1823 they were still in a tolerable state of repair, but the building was converted into an infantry barrack in 1845, and they were so cruelly mutilated that no trace of them now remains. The composition of these decorations, which were in bronze gilt, grisaille, and fresco, was Peruzzi's, and probably the execution of them also. They represented distinguished members of the Medici family and their arms, a group of warriors in the character of antique statues, and a frieze of armour.

Although architecturally it is one of Peruzzi's least successful buildings, its particular value lies in the fact that it shows the steps whereby he reached the perfection of the Palazzo Massimi, and for this reason the palace merits careful study. The cortile is raised some steps above the street level, and at the entrance has an unusually wide loggia with a semi-elliptical vault, similar in type to that in the cortile of the Palazzo Pietro Massimi. Beneath this loggia is a doorway which diminishes towards the lintel, this being the first known use of the motif since classic times; but unlike the doorway of the Palazzo Massimi the diminution, one-eighth the width of the door, is exaggerated, and the architrave, being one-third the width of the opening, is unusually coarse and surmounted by an inadequate cornice. Over the door an antique bas-relief, set in a moulded frame, anticipates a similar effective arrangement in the cortile of the Palazzo Pietro Massimi. There is an unhappy relation between the two loggias of the end façade: the Ionic one is too wide for the Doric one below it, which is also not happy in its proportion, and the arcades are unfortunately not central in the elevation. But these arcades are interesting as being the first Renaissance instance of what has been misnamed the "motif Palladio." The architrave moulding, which also runs round the arch, is very thin, but the Doric capitals that have been added to the

antique granite columns are almost identical in profile with those of the portico of the Palazzo Pietro Massimi. The side elevation of the cortile resembles that of the Palazzo Angelo Massimi, and an interesting feature is the spike-and-disc enrichment in the pilasters that support the cill of the ground-floor windows. One of the architect's careful drawings for this palace shows that the low end of the cortile, now built up, once had an opening with a balcony, giving one of those delightful views across the Tiber to the Monte Gianicolo that are a characteristic of the houses in the Via Giulia. Another drawing shows the battered doorway in detail, and others the plan, the loggie, and the windows. The mouldings deserve study not so much for their intrinsic value as that they show experiments which benefited his later work. The architrave of the ground-floor window is one-fourth the opening, the cornice of the window has a most exaggerated overhang, and in the top string in the court the main moulding as seen from below is too big in proportion to the lower members.

Tradition has assigned the Palazzo Altemps to Peruzzi, but it would be hard to think that he was responsible for more than the plan and the lower arcade of the cortile. Letarouilly suggests that Baldassare began the building, and that Martino Lunghi completed it, and this theory seems correct. The plan is spacious and well balanced, and has two fine staircases, but the detail of the lower arcade of the cortile is the part of the building that seems particularly to indicate Peruzzi's hand, although a tendency towards squatness in proportion and the absence of base mouldings give it a rather unfinished look. The detail of the capitals may be compared with those of the Farnesina, and the elliptical arches with several of his works, but the most remarkable part is the entablature of this lower order, which is closely related to that of the cortile of the Palazzo Pietro Massimi. This entablature is eight and a half times the height of the order, that of the Massimi being seven and one-fifth; if divided into twelve parts, seven go to the cornice and five to the combined frieze and architrave. The rich effect of the fret is fine, and it combines excellently with the characteristically moulded dentil cornice above. A vigorously designed ibex decorates the keystones.

Peruzzi almost invariably treated his courtyards with loggie at one or both ends, but he did not return the open arcades along the side, and this cortile offers no exception; the windows fit very unhappily into the applied arches. The upper stories, while carrying up the same treatment, appear to be by another hand at a later date.

Before considering the Massimi, three important buildings in Rome that have been wrongfully ascribed to Baldassare Peruzzi—the Palazzo Linotte, Costa, and Lante—call for notice.

Of recent years the authorities have unanimously ascribed the charming little Palazzo Linotte, also known as the Palazzo Regis or Piccola Farnesina, to Peruzzi's vigorous, if less refined, contemporary, Antonio da San Gallo il Giovane. The rustication of stones alternately thick and thin, the astylar façade, the combination of brick and stone, the somewhat heavy and coarse mouldings, are all characteristic of an outstanding individuality with a reputation for massiveness of conception rather than refinement of detail. The Linotte was probably built between 1517 and 1524 for the French prelate Thomas le Roy, and is remarkable for the three charmingly superimposed loggie to the tiny court and the simple beauty of the façade to Vicolo dell' Aquila.

In comparing the Palazzo Costa on the Borgo Nuovo with the last-named example a distinct similarity is evident. Letarouilly, Bedford, and Anderson attribute it to Peruzzi, others to Raphael, but the actual work, in the complete absence of documentary proofs, surely indicates the hand of Antonio. The fact that the Linotte was mistaken as Peruzzi's work inevitably led to the theory that the Costa was also by the same hand. Alternating triangular and segmental pediments, which Peruzzi never used, are found in both these buildings—the heaviness of them is quite alien to the one and characteristic of the other architect. The unequal courses

of the rustication, the windows generally, and the mouldings all point to San Gallo as their author, whilst Peruzzi was not in the habit of placing his main cornice at the level of the order entablature in a case of this kind, but invariably put it as a crown to the whole façade, above the attic. There is a fine mass about the building with its effective treatment of the corner, and the arrangement of half-pilasters beside the main ones is an ingenious corrective to an otherwise awkward spacing, necessitated by the fact that the façade was probably added to an older building. Letarouilly shows the bays equal, but actually there is a considerable discrepancy in the intercolumniation, as the triglyphs in the frieze show.

LEONIS X. PONT. MAX.
LIBERALITATE JACOBUS
BRIXIANUS CHIRURGUS
AEDIFICAVIT.

The Palazzo Lante, in the Via Monterone, critically speaking, is one of the most puzzling buildings of the period. Vasari omits to mention both this palace and the Linotte, and in the complete absence of external evidence Anderson and Bedford ascribe it to Peruzzi. Burekhardt is in accord with Letarouilly's interesting and plausible deductions, which are recapitulated below.

The history of the Palazzo Lante is told by the fascinating heraldic carving in the caps and spandrels of the cortile, where the plume of three feathers set in a diamond ring, the yoke with interlacing cords, and an escutcheon bearing the six Medici globes, occur repeatedly. Now, the yoke and feathers are particular attributes of Leo X., yet why is the Cardinal's hat or papal tiara wanting? Contemporary Florentine history offers a likely explanation. In 1512 Cardinal Giovanni dei Medici, son of il Magnifico, aided by his nephew, Lorenzo, succeeded in seizing the power at Florence and in giving back the government of the Republic to his brother, Giuliano II. Soon afterwards Pope Julius II. died, and Cardinal Giovanni became Leo X. on the 19th March 1513. In the same year he persuaded Giuliano, whom he considered too feeble a character to have charge of affairs, to give up the power to his nephew, Lorenzo. To humour the deposed brother he made him general of the Papal army, a merely nominal position; for Leo, though an astute diplomatist, lacked the military initiative of his predecessor on St. Peter's throne. Giuliano died in 1516.

The conclusions are that Leo X. began the Palazzo Lante to house the deposed Giuliano. In 1558 the palace was bought by Ludovico Lante della Rovere, who added the eagles to the spandrels of the upper story of the cortile, and Onorio Lunghi completed the building in 1600.

Now, who was the architect? Bramante was in charge of the Papal buildings when Leo came to power, and though the latter may have consulted him about the building, Bramante was infirm and paralysed, and died in 1514, a few months after the delivery of the plans, and probably before the work began. It is true that the arcades and capitals and staircase resemble somewhat the Palazzo Cancelleria, but it is not now at all certain that Bramante was architect to this latter building.

A second and more likely theory is that Jacopo Sansovino designed the Lante. When in 1514 Leo attended brilliant fêtes held at Florence in his honour while on his way to a conference with Francis I. at Bologna, Sansovino designed a temporary façade in wood for S. Maria dei Fiori which much delighted the Pope. On his return to Florence Leo again saw Sansovino, and entrusted to him the building of the façade of San Lorenzo. This scheme fell through, so Sansovino followed the Pope to Rome, and a few years later was chosen by Leo, in preference to Raphael, San Gallo, and Peruzzi, to build the Church of San Giovanni dei Fiorentini. It seems then, quite likely that the Palazzo Lante was designed by Sansovino before he went to Venice.

In the graceful sweep of the consoles on the astylar façade, in the delicate flow of the carving that enriches the white marble capitals of the court, the hand of a consummate sculptor certainly seems to proclaim itself. The fact that the mouldings to the doors and windows of the façade are in white marble in some measure accounts for their exquisite finish. The friezes and panels are in portasanta.

Imagination is required to conjure up the beauty that the unusual courtyard once presented, for it is now used as a depository for poor antique copies, and many of the arcades have been built up. There is an unusual wealth of colour in the columns of portasanta, cippolino, and pavonazzetto, which is heightened by the carving in the enriched Doric capitals of white marble.

Next the Palazzo Lante is a house that has never been mentioned in connection with Peruzzi, but it has such a close resemblance to other of his works, particularly in the relation of the fine rusticated basement to that of the Palazzo Ossoli, and in the proportions and details of the first-floor windows, that it seems most probable that Peruzzi was its author. Is it possibly owing to this little building that the Palazzo Lante, with which it is now connected, has been ascribed to Baldassare?

Burckhardt is alone in giving the Palazzetto Spada, in the Via di Capo di Ferro, to Peruzzi, but it seems an unlikely supposition. Letarouilly suggests that a house in the Via di Parione and another in the Piazza dei Satiri, with an interesting staircase, may be by Peruzzi. In collaboration with Michael Angelo, a sculptor of Siena, he designed the tomb of Hadrian VI. in S. Maria dell' Anima, and possibly the doorways of that church.

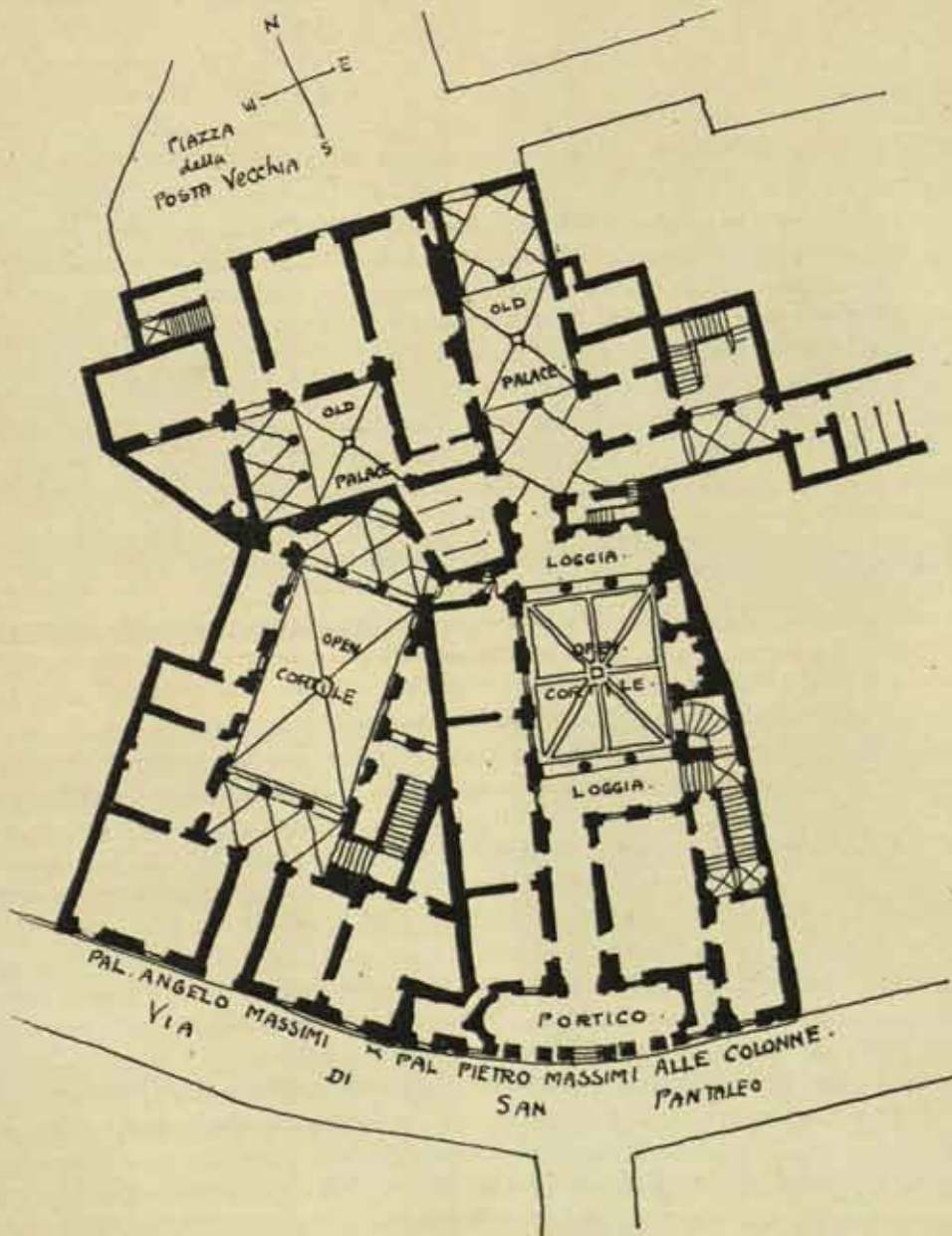
The Palazzo Pietro Massimi alle Colonne at Rome is incontestably the masterpiece of Baldassare Peruzzi.

In the sack of Rome the palace of the proud Massimi family in the Via San Pantaleo was pillaged and burned, together with many others, and Domenico Massimi died shortly after, dividing his property among his three sons, Pietro, Angelo, and Luca. Peruzzi was entrusted with the rebuilding of the palace. Seldom had an architect more difficulties to contend with, and seldom were difficulties more triumphantly overcome. Three proud brothers of an impoverished family required abodes that should with the utmost economy embody their aristocratic lineage, for were they not descendants of that Fabius Maximus who led the armies of Rome against Hannibal? The house of a Roman patrician was to be re-created, and the name of the family, "Alle Colonne," was to be embodied in the façade.

The classics were searched for information (for undreamed-of Pompeii was to lie buried for two centuries more). Yet with, so far as we are aware, no actual instance to work upon, Peruzzi has made the Palazzo Pietro Massimi perhaps more Roman than the house of the Vettii. In it the spirit of old Rome re-lives. It is no mere resuscitation of a past style. The fact that the site was awkward and irregular, and that the old walls were to be used as much as possible, seemed to spur on rather than to discourage the undaunted artist. Beginning with a straight façade, as is shown in his preliminary plan in the Uffizi, he later decided to follow the curve of the then narrow street, and thus gave to his *chef-d'œuvre* that special distinction for which it is perhaps best known.

Reference to the preliminary scheme shows how much thought was bestowed on the plan before he obtained the consummate balance and centrality of the completed building. The simple blending of the two separate establishments of two of the brothers is most admirable. The planning of the Palazzo Massimi appeals to us to-day, not only for its beauty and ingenuity, but also for its modernity. There is none of the pompous pretension that is often associated with the Italian palace, but a delightful and rare sense of domesticity. The elder brother's house in every way shows the greater originality. From the Via del Paradiso, which centralises with the portico

columns standing out against the darkness of the recess, is as brilliant as it is unusual, and the coupled columns perform a logical function in supporting the heavy mass of superimposed wall. In the refinement of the entasis of the Doric columns, and the unusually heavy overhanging of



GROUND-FLOOR PLAN OF PALAZZI MASSIMI, ROME.
From Letarouilly.

the echinus, Greek influence is strongly felt. The archives of the family record an inscription that was to have been carved on the frieze: "Petrus Maximus Dominici filius Petri nepos Aedes in Via Pontificia in novissimo excidio urbis incendio consumptas restituit a fundamentis faciundas curavit anno DNI."

Over the portico is a range of seven consoled windows with a ressault under each, but above this the façade becomes dull, being uniformly channelled, unbroken by string courses, and pierced by two stories of oblong mezzanine windows. The whole is crowned by a superb fully enriched cornice. In criticising this frontage, however, it must be noted that the principal factor which controlled the design has been removed by the widening of the narrow curved street into the Corso. Originally little would have been noticed above the windows of the piano nobile.

But to return to the portico. It forms one of the most beautiful and carefully studied works of the whole Renaissance. In contrast with the simple severity and repose of the exterior, the ceiling, with its skilfully disposed lacunaria, varying in size and depth, is moulded and enriched with a refinement and beauty that are essentially Greek in feeling. At either end of the gradual curve is a large niche, elliptical on plan, with lozenge-shaped coffers to the semi-dome that are cleverly adjusted in diminishing sizes to the ellipse, and are enriched with delicate little figures from mythology. It is superfluous to criticise the fact that these, and the ceiling, and the vaults of the cortile are all executed in stucco, for they have endured all these centuries unharmed, and the then freshly discovered antique stuccoes of the Palatine justified Peruzzi in executing these in a material at which moderns are apt to scoff.

The famous doorway that leads to the vestibule is studied with the utmost care, and there is in the Uffizi an interesting original drawing of Peruzzi showing it in detail. Unlike its prototype in the small palace in the Via Giulia, there is a Hellenic refinement in the slightness of the diminution towards the lintel, which actually occurs in the architrave as well. The same delicacy is evident in the proportion of the mouldings, the purity of the ornaments, and the graceful lines of the console, which is linked to the laurel ornament on the frieze by a most original adjustment, and though Monaldini has criticised the superfluity of dentils and modillions, it would be hard to instance a much more beautiful door. It is interesting to compare with it the one which Antonio da San Gallo il Giovane modelled after this one for his Palazzo Sacchetti. Before leaving the portico it should be noted that the pilasters are less in width than the lower diameters of their corresponding columns, and that the bench has notable console supports.

Vitruvius in his description of a Roman house says :—" Nobles, however, and those in authority and honour, having to render service to the citizens, require royal vestibula, lofty atria, and spacious peristylia." Thus from the portico, the prothyrum, with its enriched barrel ceiling, leads to the most beautiful courtyard of all Rome. Though the open space measures only thirty-six feet by thirty, the effect is quite miraculously large. There is a harmonious variety in the façades, and the mouldings and the ornaments are as exquisite as in the portico. One side of the court is low, with a recessed fountain in the centre, flanked on either side by doorways surmounted by reliefs in stucco frames. Above the loggia, at the far end, the façade has pilasters corresponding with the columns opposite, but on the other side there is fenestration only. A very lexicon of ornament is found in the elliptical vaults of the loggia of the ground floor. They are in stucco, and are said to have been executed by Giovanni da Udine, who worked for Raphael at the Vatican. The columns are severely classical, but in the entablature the frieze is omitted, whilst below the finely moulded cornice isolated guttæ give quaint and unusual effect. Remarkable, too, is the detail of the pilasters that come below the windows.

It has been suggested that the oblong openings above the entablature of the lower order which light the vaulting may be later insertions, but Peruzzi's careful drawings in the Uffizi prove that he was responsible for the chief architectural defect of the cortile. He must not be blamed, however, for the objectionable detail of the Baroque fountain. Accounts in the Massimi archives record that Gian-Solari was paid for executing stucco work in 1610, a fact which also accounts for certain florid lapses in the niche frames, on the staircase and elsewhere, and particularly in the retrograde ornament of the smaller court at the back. A fine staircase leads to the Ionic loggia on



FAÇADE.



PORTICO.



CORTILE.



DETAIL OF CORTILE.

THE PALAZZO PITTI MASSIMI, ROME.

the piano nobile, which is entered through an arch decorated with pilasters, with alternating flutes and channels and an interesting guilloche ornament. The columns and pilasters and the doorway are of light grey marble, not of porous stone like the rest of the building; and the capitals, though Greek in the purity of the volute lines, seem somewhat small and narrow. It is interesting to compare the ornament on the side of the volute with that on the consoles of the cornice of the Casa Pollini at Siena. The general effect of this graceful upper loggia, which contrasts so well with the severer one below, is enhanced by the colour scheme of the frescoed walls, and the ceiling of painted oak with rich coffers based on three hexagonal panels.

A beautiful doorway leads to the great Hall of the Dais, a superb example of a Roman state room, which still contains the scarlet baldachino with its tapestries. The eye is at once drawn to the splendour of the carved and coloured ceiling, with its rich coffers of varying sizes, and to the deep frieze below that harmonises with the ceiling compartments. The panels represent scenes from the history of the illustrious family, small windows being substituted on the side facing the street, after the Peruzzi manner; but, unfortunately, the Ionic pilasters shown in Letarouilly's drawing are no longer visible, having been only painted in fresco, and the result is an appearance of top-heaviness. Variety is found in the ceilings of the other reception-rooms, which are all coloured.

It seems strange that the adjacent palace of the brother Angelo should be architecturally so different in character from that of Pietro, in spite of the remarkable harmony of the planning, and though more typical of the period, it cannot lay claim to the originality of its neighbour. No evidence is found here of the Greek influence that is so prominent in Pietro's house. It is a Roman house of the culminating period, with its simple balanced plan, its fine portone, its five well-spaced windows, set in a façade, unencumbered by pilasters, but confined by angle quoins and divided horizontally by string-courses, one with a decorative fret. The window openings are singularly happy in proportion, and are well contrasted in size and shape; and the details generally are pure, severe, and well worth careful study. Owing to Peruzzi's untimely death, the cornice was never added.

The cortile is very similar to that of the house in the Via Giulia—in both the open space corresponds almost exactly with Vitruvius' rule, that "the width of the atrium should be two-thirds its length." The sides, with their ranges of simple windows, bear no relation to the two ends, which both have loggie on the ground floor consisting of the conventional Roman arcade framed by the Doric order with its regular triglyph and metope. The pedestals appear weak and stilted, and the arch imposts are cut into by pilasters—a defect that often occurs in Rome, where the pilasters seldom have sufficient projection to take the impost comfortably, as is seen in the porch of S. Maria in Domnica.

The cortile to-day is deprived of its culminating feature, for the far loggia on the ground floor has been built up. But anyone who obtains admittance at the little central door finds that it has been converted into the prince's kitchen—for the Massimi still live here, and the latest scion of this ancient family is often visible in the arms of his gorgeously appressed nurse—and that opposite him is the crowning glory of the building, a great niche, set in an apsidal termination to the loggia which once closed the vista from the street. This niche is 5 feet 8 inches across and 14 feet high, with the back panelled and the semi-dome enriched with coffers. Its effect is greatly heightened by being set back in a recessed arch two feet deep, the soffits of which are richly decorated with flowing Roman acanthus scroll-work. The exquisite richness of this feature must have greatly enhanced the general effect of a severely simple courtyard.

The view across the loggia at the entrance is admirable, with the panelled arch and short flight of six steps that comes before the turn to the main flight leading to the loggia of the "piano nobile." The Ionic capitals are perhaps as beautiful as any in Rome, and are the outcome of

the labour that Peruzzi spent on the setting out of volutes, as seen in his drawings. A rich ceiling and deep painted frieze are also found in the large hall opening off the loggia. The two Palazzi Massimi are the culminating triumphs of a period in which palatial architecture predominated, and, though innumerable instances of larger buildings could be found, none show so high a measure of perfection. The third brother, Luca, intended to place his palace on the opposite side of the road, but it was never built.

SIENA.

How different from Rome, and all that Rome implies, is the lovely Tuscan city that gave Peruzzi birth—Siena, set in a fruitful land of vines and olives. There is a delightful sense of intimacy about this quaint old town with its walls and gateways, its steep and crooked lanes, its



THE PERUZZI BASTION, SIENA.

red-brick buildings, with their rich brown roofs, nestling among hills and valleys. Here first was awakened the sense of beauty in the boy who became not only Siena's most distinguished architect but one of the most famous artists of her distinct and interesting school of painting; for the wide-eyed Baldassare in his boyhood had watched the busy throngs of workmen, sculptors, and decorators engaged upon the building and embellishment of the great Duomo.

Although not many years of his life were spent in his native town, and he was principally concerned with the building of the fortifications as *Architetto del Pubblico*, a post he held from 1527 to 1529, and again from 1531, he nevertheless has left an indelible mark upon the place, apart from works executed in his official capacity. How much is directly due to his personal supervision, in these smaller buildings, it would be hard to say, but it is certain that lapses found in some of those which have been attributed to him can only be due to the school of pupils and assistants that grew up under his tutelage.

There is little evidence as to the date of these Sienese buildings, so no attempt has been made to arrange them in chronological order. The great bastion that he built to the right of the Porta Pispina at an angle of the city wall is one of the most remarkable pieces of fortification in Italy, and is almost Egyptian in its strength and grandeur. The pronounced batter of the base is surmounted by a huge 14-inch torus, above which rises a great mass of unbroken brick; and a rich terracotta cornice, a plain brick frieze, and another torus form an effective crown to the whole. The form of the plan is peculiar, and no more striking instance could be found of the architectonic quality ennobling an engineering work that admirably fulfils its practical purpose.

It does not seem probable that Peruzzi designed the Porta Pispina and the Porta Laterina; but the Porta Camollia has simple lines and coupled brick pilasters with stone Doric capitals which must be from his design.



CASA POLLINI, SIENA.

The Casa Pollini, or Celsi, which stands on the street called by the Sienese after his name, is not only Peruzzi's most beautiful Sienese work but one of the most charming and satisfying houses of all Italy, and like the Palazzo Pietro Massimi at Rome it sums up all the best characteristics of the man. Here full advantage is taken of an awkward site; simple local materials are used with frank and admirable fitness; the proportions of the façade show a rare harmony and repose, and its large plain surfaces are adorned only by a few mouldings of refined profile and an exceedingly rich and well-designed cornice in red terracotta, which is placed in the shadow of the shaped rafters that project two feet beyond the topmost member. Comparison with the great bastion shows many corresponding features—the batter of the base, the torus mouldings, the plain wall surfaces, and the rich crowning cornice. How cleverly the awkward junction of the steep narrow lane with the street has been overcome; how effectively the existing levels have

been adjusted ; and how delightful the carrying on of the basement wall to support the raised garden.

The batter on the basement is 2 feet 3 inches on a height of 12 feet, and it is evident that the doors and windows here are later insertions, and that originally it was only pierced by small openings. The plain brick surface that comes between the lower terracotta torus and the moulded stone string-course below the seven windows of the "piano nobile" is in height the same as that of these window openings, which are just over one and a half times their width in height and one and a half times their width apart. The architrave of stone is just under one-fifth of the opening ; there is a sunk panel in the frieze, and the cornice is simply moulded. A large expanse of plain surface above these windows, which is just over one and a half times their height, is accounted for by the fact that the rooms inside are vaulted, being, moreover, decorated by three interesting frescoes by Peruzzi. The depth of the frieze is twice the depth of the cornice, which is one-sixteenth of the height of the whole façade ; and the little windows in the frieze are just over half the width of the main windows below. The bricks are of a size that gives five courses to 14 inches.

Few buildings illustrate more excellently the effects that may be obtained by the simplest elements, by sound straightforward design, devoid of meretricious tricks and superfluous ornament, and the maturity of the style indicates that it belongs to a late phase of his art.

The noble campanile of the Carmine across the road is also interesting in its straightforward use of brick, and is full of Peruzzi's characteristics. The treatment of deep brick arches, slightly sunk panels, and cornices marking off the various stories is more successful than the rather awkward junction of the octagon with the square. Peruzzi also designed the cloisters that adjoin this church ; they are in brick except for the capitals and bases of the Doric pilasters, which are in stone ; the arches of the arcades are semi-elliptical, and the brick rings and cornices merit careful study. Above the arcade are two ranges of small windows with brick architraves.

Less happy than the Casa Pollini is No. 24, a house further down the Via Baldassare Peruzzi. It also is of brick with stone dressings, and has brick pilasters. Perhaps the most interesting feature is the fine central doorway, which diminishes from 6 feet 1 inch to 5 feet 8½ inches ; it has deep jambs, and the cornice fits in cleverly with the stone caps of the brick pilasters.

The façade of the Church of Sta. Martha has also a very beautiful stone doorway which must unhesitatingly be given to Peruzzi. Like the last example, it has a batter, and the jambs, 3 feet 8½ inches deep, allow for four steps, which give a fine effect. Particularly refined and characteristic are the mouldings and consoles of this door, whilst the façade has a slight batter on the plain brick base, and, above, simple windows, and brick niches set between pilasters.

The Palazzo Mocenni or Francesconi, in the Via Cavour, has a good sense of proportion and an interesting disposition of windows on a plain brick façade. Not only do the mouldings, the windows in the frieze, and the torus suggest that Peruzzi designed the building, but the terracotta cornice also is identical with those of the Casa Pollini and Palazzo Turchi cast from the same moulds. The windows of the "piano nobile" are later in date, and it is evident that the building was never finished according to the original scheme.

The cloister of San Martino has been attributed to Peruzzi, but it must be admitted that it is one of the most disappointing of his designs, although it shows a direct use of moulded brick. The simple plan is of four bays by five, and the elevations consist of two superimposed arcades with applied Doric pilasters. Those above are of the same attenuated proportions that Peruzzi used in his early Roman work, being ten and a half times their width in height ; and the imposts are also in the form of Doric capitals. Judging from the style this should be an early experiment, or it may have been carried out during his absence.

Much more satisfying is the charming little church of San Giuseppe, which is splendidly

situated on the outskirts of the town where the ground slopes rapidly away to olive orchards. It piles up very finely from below and, like the Casa Pollini, shows how fully Peruzzi took advantage of the natural site. In plan it consists of an equal octagon 36 feet across, surmounted by a plain groined vault, and with four slightly projecting arms. The façade to the entrance, with its two tiers of applied brick pilasters, does not reveal the distinction that is given to the other side of the building, where the slightly projecting arms finish in a battered base, and an arch is thrown across between them, giving a balcony that looks across the lovely Val d'Elsa. The deep frieze has little windows, the octagon elliptical eyes, and its low-pitched roof of mellow coloured tiles is surmounted by a well-proportioned lantern. Here are all the elements of the bastion and Casa Pollini used under different circumstances—the battered base, the plain surfaces of unbroken brick, and the deep frieze below crowning shadow.

The chapel that stands outside the Porta Camollia is in Peruzzi's earlier Sienese manner. In form it is like a little classic temple with a portico, with three arches to the front and one at each end on the return sides, combined with pilasters of slight projection. The pediment above truthfully expresses the low-pitched roof, which runs through from end to end; and elliptical eyes above the arches, and sunk panels, recall the Carmine tower. It is almost entirely built of brick, with stone for the Doric capitals and bases; five courses of brickwork go to 11 inches, and the cornice is admirable in its simple use of moulded brick and tiles.

It is impossible to agree with Bedford that the interior of the Church of the Servi, or Santissima Concezione, is by Peruzzi, for the capitals and bases are coarse, and there is no trace of a characteristic moulding; nor is the doorway of Santo Spirito worthy of him, though he is said to have designed it in 1519 for Girolamo Piccolomini, Bishop of Pienza.

The charming grace of the little cortile of S. Catherine's house, with its slender stone Doric columns and simple use of brick, does not betray in its details the refinement of Baldassare, and was probably carried out by one of his pupils, possibly from his design.

As "capo maestro" of the Duomo, Peruzzi designed the High Altar and the pilaster decorations in the apse. Plain panels of veined and coloured marble are framed in mouldings of white which, in the beauty of their profiles and their ornamentation, are unsurpassed in Italy. As executed, it is an improvement upon his preliminary study preserved in the Palazzo Reale at Turin.

Matas attributes to Peruzzi the design of the beautiful staircase to the Cathedral pulpit which was carved by Bernardino di Giacomo in 1543.

The organ case that he designed for Santa Maria della Scala has been much admired for its unusually capricious and imaginative design. It is coloured, and makes an effective piece of decoration.

Milanesi thinks that Peruzzi designed the marble seat in the Loggia della Mercanzia, and tradition assigns the Fonte di Pescaia to Peruzzi. It shows a clever use of brick, though the authorship is doubtful.

Dotted about the lovely country around Siena are several villas attributed to Peruzzi. The nearest of these, a mile or so outside the Porta Camollia, is called the Palazzo Turchi or Casa del Diavolo, and the main portion of it can without doubt be assigned to Baldassare. At the far end is a quaint, narrow, tower-like building, in brick, with a turret, effectively decorated with heraldic shields and busts set in well-modelled terracotta wreaths, and lettered panels supported by coupled consoles and the Piccolomini moon. It is impossible to explain how this was connected with the little chapel that stands at the junction of the two roads, for the low connecting block is presumably of later date.

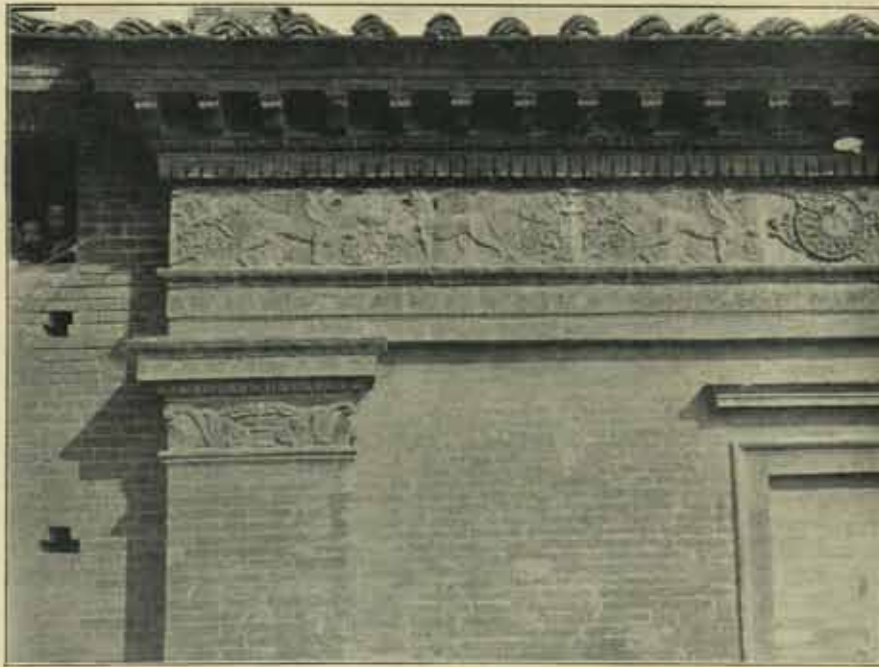
The chapel is perhaps not so remarkable in its general design as for the beauty of the ornament and mouldings. The cornice is from the same terracotta moulds as that of the Casa Pollini, so it probably belongs to the same date. On the frieze are griffins and candelabra, which recall

those on the Temple of Antoninus and Faustina in the Forum, modelled with great delicacy. The wave ornament in the architrave, the enrichment of the pilaster caps, and the ornament and mouldings generally, are the expression of the same man who designed the Chigi Chapel and the Siena Cathedral High Altar. The antique influence is very noticeable in the pediment and the rich coffers to the deep-set arch, as well as in the entablature. The bricks, which, like the terracotta, are of a rich red colour, finish at six courses to 15 inches.

The Villa Mieli has been mentioned in connection with the Vigna del Papa Giulio at Rome, and has an unpretentious façade with generous stucco surfaces, stone Corinthian pilasters at the angle, small windows in the frieze, and a rusticated portone.

Much more famous is the Villa Belcaro, that stands on a hill some miles from Siena. It is particularly remarkable for Peruzzi's own fanciful and delicate paintings that decorate the ceiling of the loggia. They belong to his later years. This placing of small figure groups in panels surrounded by dainty filigree ornament and birds is characteristic of him.

It is surely a gross libel to say that the façade of the Villa Santa Colomba, as it now stands, is by Peruzzi, for it is clothed in an objectionable dress. The windows of the first floor, the whole of the top story, the exaggerated, battered buttresses, the niches and cartouches, belong to a later date. It is true, however, that behind all this florid covering traces of a purer form are visible in the recessing of the three arches and the detail of the orders, but Peruzzi would hardly have blocked columns, although he may have designed the plan and spiral staircase and given a sketch for the façade.



PALAZZO TURCHI, SIENA.

Bedford says that he designed the Villa Celsa, four miles beyond the Santa Colomba, and a small country church near by.

BOLOGNA.

After Rome and Siena, Bologna is the city which is most closely associated with Peruzzi's name. He went there in 1522, as has been stated, to prepare drawings for the completion of San Petronio, and during his stay he designed the beautiful doorway of San Michele in Bosco, that stands on the hill just outside the city. The opening of this doorway measures 15 feet by 7 feet 6 inches, and the Greek influence is here felt as strongly as in any of his works. The batter towards the lintel is slight and refined, 2 inches in all; and the architrave, which is just one-sixth

of the opening—Peruzzi's were often heavier in proportion—has an admirable section. The hollowed upright that supports the console remains vertical on its external face, and the consoles themselves are almost over-enriched with ball ornaments and scales on the face, that are found also on the modillions of the Casa Pollini cornice at Siena. Whilst the low pitch of the pediment, the antefixæ, and the general character of the door are strongly Greek in feeling, the flowing

scroll-work of the frieze distinctly recalls the Roman ornament from the Forum of Trajan. It would perhaps have been better had this frieze been left plain.

Bedford says that he designed the Fiorese palace, and from a drawing in the Uffizi we know that he designed the unimportant Palazzo Lambertini. The loggia of this building until quite recently was to be seen in the Albergo del Commercio, which, however, was lately swept away for city improvements.

Until quite recently the famous Palazzo Albergati has been considered by many to be Peruzzi's masterpiece, and it is with much diffidence that this theory is called in question, for almost all our ablest and most eloquent English authorities have unhesitatingly attributed it to Baldassare. In venturing to assert that in this magnificent façade Peruzzi had no share, it must not be thought that the author of this essay fails



DOORWAY, SAN MICHELE IN BOSCO, BOLOGNA.

to appreciate what must always rank as one of the noblest frontages of all time. How came it that this building was attributed to the master? Does the actual work really justify the assumption that Peruzzi was the architect? It is true that there is a batter on the base, that there are small windows in the frieze, that there is a sublimity of proportion and grandeur of scale that are worthy of Peruzzi; but are these general indications sufficient proof? Vasari would scarcely have omitted to mention a building of such prime importance, and recently discovered facts seem to prove conclusively that the credit of this truly admirable façade must be given to another. Burekhardt's new edition says that the windows and right door were built by Battista di Piero of Como in 1519, that the main cornice is dated 1584, and the great

left door, which was to have formed the centre of the front, 1612. Now, does the internal evidence bear this out? The right-hand doorway manifestly could not be by Peruzzi; and charming as are the little ground-floor windows, their mouldings have a top-heaviness and coarseness of which the most refined of architects could never have been guilty. Coarse, too, are the Ionic capitals to the windows of the piano nobile, and the arches fit unhappily between the columns. The cornice does not in a single member bear the hall mark of Peruzzi's style. It would seem, then, that these points in the actual work bear out the given dates. In suggesting that Sebastian Serlio may be the architect who completed this building—the date of which is given as 1540, four years after Peruzzi's death—Dr. Albrecht Haupt has offered a very plausible explanation. Serlio admits in his book that he owed his knowledge of architecture mostly to Peruzzi, and he dwells upon the time and care that his master spent in instructing him in the art. Moreover, Serlio was a Bolognese, and it seems extremely probable that the batter of the basement, which has clearly been added to earlier building, and the Peruzzi characteristics here were due to the hand of the disciple. Indirectly, credit must certainly be given to Peruzzi, but whether the building should be included in a list of his authentic works is another matter.

As it stands to-day, the work which Peruzzi executed in other parts of Italy is not of very great importance. He prepared for Alberto Pio a model for the Duomo of Carpi, which was sent from Rome in 1515. The church was only partly built, remained unfinished until 1606, and was then so altered that only the general idea can be assigned to Peruzzi. Between 1517 and 1520 he was engaged on the Church of S. Niccolo in the same town, and in 1511 and 1515 sent designs for the Oratorio della Rotunda and the Oratorio della Sagra, the first of which was taken down in the seventeenth century.

For Ferrara he designed the doorway of the Palazzo Saccati or Prosperi, which is heavy and disappointing. The frieze ornament and detail recall the doorway at Bologna, and the cornice may be compared with the Cappella Chigi at Rome. The Church of S. Sebastiano at Vallepiatta and the Panteone di Pontremoli at Viterbo have been attributed to Peruzzi, as well as a villa near Bibbiano for Cardinal Petrucci, and one at Salone for Cardinal Trivulzi.

At Montepulciano, Baldassare added the top story and cortile to the Pal. Contucci which the elder Antonio da San Gallo had begun, and the Pal. Ricci is said to have been carried out from his design.

The lengthy catalogue of Peruzzi's works would not be complete without mentioning the fact that he made drawings for and probably actually began the great Pentagon at Caprarola, for he is said to have directed the building of the ground floor in 1530. Drawings in the Uffizi and at Siena leave no room for doubt that Peruzzi initiated this superb scheme, which Vignola brought to so successful a conclusion. Among his sketchbooks are studies for spiral stairs and circular churches set in pentagons. Nor is this the only instance in which Vignola benefited by Peruzzi's teeming brain.

Though he excelled as a draughtsman, Peruzzi realised that in architecture drawing was of secondary importance only, and yet the portfolio of his drawings in the Uffizi at Florence is of the utmost value to the student, for his draughtsmanship is, like his character and his design, sound, straightforward, and simple, yet full of feeling and most sensitive in touch. There are no tricks about his drawing. The line is extremely delicate, the shadows are washed in light tones, his more finished plans are drawn in with a fine, firm line, and the circles are put in with compasses; on the walls of plans he almost invariably put a light sepia wash, and the charm of his drawings is heightened in no small degree by the beautiful handwriting of his notes and figures. Other drawings, less geometrical, have a fresh sense of freedom. A study of the Massimi door, in particular, shows how fully and accurately every detail was thought out.

Cardinal Giovanni Gaddi was in charge of the decorations, which were on a most lavish scale, and every source says that Antonio da San Gallo il Giovane had supreme control over the sculptors, painters, carpenters, and stonemasons. Now, in Peruzzi's Sienese sketchbook there are fifteen studies for triumphal arches, which can only have been intended for this State entry of the emperor, for Charles VIII. in 1483 entered Rome in the night, and not till Marc Antonio Colonna returned in triumph from the Battle of Lepanto in 1571 did Rome have any other such festivity. The triumph took place in April 1536, and Peruzzi died in January of the same year; but it is known that the question of the decoration was being discussed on 26th November in the previous year, and the position that Peruzzi then held, combined with the fact that he excelled in festive and scenic architecture, makes it seem highly probable that San Gallo carried out Peruzzi's designs.

The question now arises, Did Peruzzi make all these drawings that are preserved in the sketchbook? Hermann Egger asserts that some of them are only copies of originals. Peruzzi, as is seen in the Uffizi, generally drew in his plans with a firm decisive line, washed in the walls, and filled in notes and dimensions in his unmistakable handwriting; but in the sketchbook the lines often tremble; there are no washes on the walls, no shadows, and no characteristic notes or dimensions. Accordingly, Egger makes the deduction that they were copied in rapid succession by a young unknown architect in 1580. But whether this is true or not, the Sienese sketchbook preserves many designs by Baldassare that would otherwise be lost.

Many of the pages are doubtless authentic. They contain Leonardesque fancies: vigorous studies of horses, dogs, elephants and camels, lions and sea-serpents and porcupines. One drawing shows a crowd watching a procession, all on tiptoe or clinging to pillars, full of eager expectation. There are numerous sketches for Madonnas. Of more architectural interest are studies for S. Peter's, for the terraces and steps before Caprarola, for a pentagonal church with a circular interior, for tombs, for a colonnaded bridge, and for the High Altar at Siena Cathedral.

Other Peruzzi sketches and drawings are in the Vienna Court Library, notably a rectangular preliminary plan for Caprarola.

CONCLUSION.

The individuality of the artist cannot be divorced from his works, and in the case of Baldassare Peruzzi the two are in perfect accord. It is unfortunate that there is not more information about a character so rare. He combined with pride and firmness a childlike simplicity, and his modesty was remarkable for an age so full of bombastic self-assertion, lust, and greed as the Cinquecento. He was a Greek, not only in his work but also in the lofty independence of his soul, and nothing that was sordid and mean had a place in his disposition. Had Peruzzi desired to lead the princely courtier's life, such as Bramante led at Milan or Raphael at the Papal Court, he could no doubt have gratified his desire, for he enjoyed the friendship of wealthy and powerful men; but worldly success had for him no allurements. How striking is the contrast between his lowly Sienese home and Antonio da San Gallo's splendid palace on the Via Giulia. His was the quiet life lived amid the turmoil of a restless and eventful age, the life of the artist and scholar living for his art alone, desiring neither wealth nor applause. "He was always courteous, modest, and gentle with all," says Vasari, whose anecdote of the siege of Florence, when Baldassare "refused to do what the Pope bade him, whose indignation he did not fear, though Clement was much incensed against him," may not be quite borne out by historical fact, but was based upon a reputation for independence of spirit. The scanty earnings of his industrious youth he shared with his mother and sister; and yet further testimony to the

gentle, lovable charm of his character is given by his pupil Serlio, in *The Five Books of Architecture*, where he writes :—

For all you will find here to please you, do not give praise to me, but give it well to my predecessor Baldassare Peruzzi of Siena, who was not only very learned in his art, but was also courteous as well as liberal in instructing those who were interested, especially me, which recounts to his benignity.

Peruzzi's work is the essence of his character. The amount achieved in an architectural practice that probably only covered twenty-five years, to say nothing of the results of many other activities, is eloquent testimony to an untiring industry. His buildings invariably express breadth, simplicity, and repose combined with an exquisite refinement of detail; and his independence of mind is reflected in the originality that permeates the work and makes it so refreshing and vital. Yet, whilst the most scholarly of architects, he was not the slave of rules that sapped the life from the work of some of his successors, but was fired with a passion to evolve new combinations based upon antique precedent. Every smallest detail is purged in the crucible of thought. His triumph over difficulties is at one with his dauntless courage of soul, and the quality that gives to works of small compass the appearance of grandeur and scale is the outcome of a great mind living in humble circumstances. His designs for scenery proclaim his imaginative and inventive powers; his Ponzetti fresco an intense purity and spirituality.

The work of Baldassare Peruzzi has style. It is the work of a particular man which, though belonging to the school of his day, yet possesses a more sensitive refinement, a more complete expressiveness, a fuller æsthetic realisation than that of his fellows. Under him the Renaissance style reached its highest level of perfection. In the work of no man is found a nobler majesty of mass combined with such purity of detail. His construction, like his design, is simple, direct, and sound. His exquisite ornament is never carried to excess, but is effectively placed in contrast to plain surfaces.

Of particular features that originated with or were first revived by him may be mentioned the placing of small windows in the frieze, the diminishing of door openings towards the lintel, the battering of basements, and the consoles or pilasters below the sills of ground-floor windows, framing panels or basement openings. The *motif Palladio* and the placing of figures on the spandrel arches, are probably due to his initiative, and he used the orders with considerable latitude, being their master, not their slave.

Peruzzi was a master of materials also, and his use of brick and terracotta in Siena is an admirable instance of the appreciation of texture. In Rome he often covered brick with stucco, after the ancient Roman manner, and it must be borne in mind that he generally did this in order to obtain a surface for decorative painting. He had a fine knowledge of masonry: the richly decorated stucco vaults of the Massimi are justified by their durability. His Sienese High Altar in marble is full of understanding for the material, and his organ case in wood of a playful caprice.

It was in Siena, with its steep ways and awkward corners, that he learned to realise the æsthetic possibilities of unusual sites, not shirking difficulties by making the rough places smooth or the crooked straight, but attaining his effects by the retention of existing curves and levels. His mouldings and their enrichments possess a distinction, refinement, and purity that are supreme.

Peruzzi went further than the other architects of the Renaissance in that, while sharing with them a boundless enthusiasm for the monuments of ancient Rome, he learned to perceive the defects often discernible in the Roman antique, the frequent coarseness, the wearisome employment of applied orders, the inevitable casing of the brick core in works of any architectural pretension. He was the first who refined the Roman work with the Hellenic spirit, and this he did without lapsing into archæology and revivalism; and banishing all temptations

arising from an incomparable facility of draughtsmanship, he always kept strictly within the limitations of his art.

Baldassare Peruzzi has a profound message for the architect of to-day, for, as in the case of his great contemporary Leonardo da Vinci, the value of his influence extends far beyond the limits of his actual achievement. He stands for that self-control and elimination of the unessential which is the highest quality of all great art. He typifies the tireless striving for perfection. He shows us how the Greek ideal of beauty and the Roman sense of power may be so blended as to satisfy modern needs, and how in small and often insignificant opportunities the classic spirit may live again with a fresh grace and vitality.

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AUTHOR'S LIST OF THE ARCHITECTURAL WORKS OF BALDASSARE PERUZZI.

Rome.

Farnesina.
Cappella Chigi.
S. Eligio degli Orefici.
Sta. Maria in Domnica.
Palazzo Orsini.
Vigna di Papa Giulio.
Palazzo Altompe.
Palazzo Medici in Via Giulia.
House in Via di Parione.
House in Piazza de' Satiri.
Tomb of Hadrian VI. Sta. Maria dell' Anima.

Carpi.

Part of Duomo.
Church of S. Niccolo.

Ferrara.

Doorway: Palazzo Prosperi.
With fragments at Montepulciano, Salone, and Bibbiano.

Siena.

Fortifications.
Casa Pollini.
No. 24 Via Baldassare Peruzzi.
Palazzo Mocenni or Francesconi.
Carmine, Campanile, and Cloister.
San Martino, Cloisters.
Sta. Martha. Façade.
San Giuseppe.
Chapel outside Porta Camollia.
High Altar, Duomo.
Organ Case, Sta. Maria della Scala.

Bologna.

Doorway. San Michele in Bosco.
Palazzo Turchi or Casa del Diavolo.
Villa Mieli.
Villa Belcaro.





9 CONDUIT STREET, LONDON, W., 18th October 1913.

CHRONICLE.

The Ancient Monuments Board.

The Ancient Monuments Consolidation and Amendment Act, which became law at the close of last Session, binds the Commissioners of Works to constitute an Advisory Board under the name of the Ancient Monuments Board. The Board is to consist of members representing the bodies named in the First Schedule to the Act, and such other members as the Commissioners think fit to appoint. The bodies scheduled include the Royal Institute of British Architects, the Royal Academy, the Societies of Antiquaries of London and Scotland, the Trustees of the British Museum, the Board of Education, and the Royal Commissions on Historic Monuments in England, Scotland, and Wales, respectively. Separate advisory boards may also be constituted for Scotland and Wales, and in that case the Act requires that "the obligation to appoint members representing the above bodies shall, so far as those bodies are bodies whose activities are confined to England, Scotland, or Wales, be construed distributively."

The London Society.

An important movement to advance the practical improvement and artistic development of London is foreshadowed by the arrangements of the London Society for its second year's work. First, in the metropolitan boroughs a series of Committees is being formed, and the Society would be glad to hear from those who would be willing to help in this direction. The main object of the Committees will be to find out what improvements are being proposed in the various districts, and to acquaint the central body with what is going on, so that the Society may step in if necessary before the work is actually put in hand. Committees are proposed for the following districts: (1) The City of London; (2) The City of Westminster; (3) Kensington, Chelsea, Paddington, Hammersmith, Fulham; (4) Hampstead, St. Pancras, Marylebone, Holborn; (5) Islington, Stoke Newington, Hackney, Finsbury, Shoreditch; (6) Bethnal Green, Stepney, Poplar; (7) Woolwich, Greenwich,

Deptford, Lewisham; (8) Lambeth, Southwark, Camberwell, Bermondsey; (9) Wandsworth, Battersea. The Kensington group is already formed, with Mr. W. H. Davison as chairman, and Mr. Maurice Webb as hon. secretary. For the City of Westminster, Commander Dixon, R.N., has accepted the position of hon. secretary.

The Society is also arranging to hold three informal dinners at the Waldorf Hotel, on 11th November, 9th December, and 20th January, when a special speaker will open a discussion, subsequent speakers to be limited to five minutes each. The topics will be "London in the Past" (speaker, Mr. H. B. Wheatley, F.S.A.); "London in the Present" (speaker, Mr. Yoshio Markino); and "London in the Future."

Arrangements are being made for six ordinary general meetings, taking the form of lecture and discussion, at the Royal United Service Institution, Whitehall. The first Paper, entitled "Roads and Streets," will be read on 4th November by Mr. Raymond Unwin. Subjects of other Papers will be "The River," "The Charm of London," "The Government of London," and "The Railways."

An influential Parliamentary Committee has also been formed to whom the Society can express its opinion on matters in either House of particular interest to Londoners from time to time. Among the members of this Committee are Lord Plymouth, Lord Curzon, Lord Claud Hamilton, Mr. Cave, Sir William Bull, Mr. Hayes Fisher, Mr. Boyton, Mr. Pretymann, Mr. Carr Gomme, Captain Jessel, Mr. Burgoyne, Mr. Dickinson, Mr. Remnant, Mr. Touche, Mr. Lawson, and Mr. Glyn-Jones.

A special Committee of the Society has been considering the future development of the south side of the river, and will shortly issue an interim report.

In pursuance of the Society's general policy of looking at the needs of London as a whole, the Open Spaces Committee is preparing a comprehensive map showing all the open spaces which are already secured to the public, and those which are in private hands. It is felt that this map will be of great assistance to local authorities and others who are entrusted with the duties of town-planning.

Full particulars of the aims and objects of the Society may be obtained from the Secretary, Mr. Percy Lovell [A.], 27 Abingdon Street, Westminster.

The London Museum: Rearrangement at Stafford House.

The work of transferring the London Museum to its new home at Stafford House is now nearly completed. Stafford House forms an admirable setting for the collection, in the classification of which a new principle is to be followed. Instead of the exhibits being classified according to the object, as was the case at Kensington Palace, each section will

be arranged to represent a period, and it will contain a miscellaneous collection of objects relating to it. In this way each section will present a complete view of the life of London in a particular age, as exemplified by the objects commonly in use. Strict chronological order will be maintained. On the ground floor there will be rooms devoted to the paleolithic age, the neolithic age, the bronze age, Roman London, a section representing London from the sixth to the tenth century, and finally a room devoted to London in the fifteenth century. Ascending the grand staircase, the visitor will enter the sixteenth-century room, and then sections relating to the Commonwealth and the Restoration. There are two rooms devoted to the Charles II. period. Two large galleries will contain objects of the eighteenth century, and there are other apartments devoted to more modern times, from the beginning of the nineteenth century. In the Picture Gallery, where Gainsborough's Blue Boy formerly hung, there will be found a collection of costumes worn in London at various periods, and, in a room beyond it, a theatrical section showing the history of the London stage. And so to the State Room, which will be devoted entirely to objects associated with the life of the Royal Family in London. The Royal robes have been taken out of the cases in which they were placed at Kensington Palace, and will be displayed to greater advantage in a recess in the wall which is being covered in with plate glass. The visitor will then descend a spiral stair to the basement, where the large architectural objects will be exhibited, again in chronological order. Here, also, will be criminal London, and the Roman boat, for which a large pit has been prepared. The structural alterations which were necessary at Stafford House have now been completed, but the work of breaking up and rearranging the collection must occupy considerable time. It is therefore expected that the Museum will not be open to the public until early next year.

British Museum: Mosaic from Roman Gaul.

The British Museum has recently purchased a Roman mosaic which was discovered at Saint-Romain-en-Gal, the site of a Roman town on the bank of the Rhone, opposite Vienne (Isère), to the south of Lyons. The mosaic is temporarily on view in the First Greek and Roman Room. It measures about 12 feet by 10 feet 6 inches, and formed the floor of a room. The design consists of a central panel with four medallions at each corner set in the labyrinthine windings of a complex and symmetrical *mœndra*. The central panel contains a nude figure with a hound. Inasmuch as some small portion of the mosaic of this panel was missing, and has been to that extent restored, it is of doubtful significance. With this exception the mosaic is in a perfect state of preservation. The medallions are set in the four corners.

They contain respectively a bust of Dionysos, wreathed; a bust of a young satyr; busts of an old satyr and a *mœnad*; and busts of a young Pan and a *mœnad*. Each of these medallions is surrounded by a square border, the corners of which are filled in with birds. The prevailing colours in the mosaic are black, white, red, and yellow, but other shades are introduced in the panels and medallions. The mosaic, which is distinguished by completeness, is the only example in the Museum from Roman Gaul. Though not comparable with the finest work in this style found in Naples and Rome, it is of finer workmanship than that of the provincial work found in Britain or Africa. The squares employed are exceedingly small, particularly in the panel and the medallions, and they have been pieced together with extraordinary skill and artistry.

Victoria and Albert Museum.

In connection with the tours of the Victoria and Albert Museum made under the conduct of the official Guide [see JOURNAL, 27th Sept. p. 715] the following scheme came into operation on Monday 6th October:—

Mondays.—12 o'clock, General tour; 3 P.M., architecture and sculpture.

Tuesdays.—12 o'clock, Oriental carpets, tapestry, musical instruments; 3 P.M., embroidery and ecclesiastical vestments, historical costumes and lace.

Wednesdays.—12 o'clock, Gold and silver work, rings, and jewellery; 3 P.M., ironwork, Oriental metal-work and wood-work, leather-work.

Thursdays.—12 o'clock, Furniture and woodwork; 3 P.M., general tour.

Fridays.—12 o'clock, Ceramics and painted enamels; 3 P.M., Salting collection.

Saturdays.—12 o'clock, Book production and illuminated MSS., engraving, illustration, and design; 3 P.M., general tour.

This scheme is subject to revision from time to time. Arrangements for the inspection of the Indian collection are under consideration. The Museum authorities are anxious that the public should do its share in assisting them in keeping the parties within reasonable limits. It is understood that tickets will be provided for those who wish to join a party, and only those visitors who have obtained tickets will be allowed to join it. Tickets can be had of the doorkeeper at the main entrance, and will be issued to the number of twenty-five for each party.

New Buildings at Cambridge.

The University correspondent of *The Times* gives the following particulars of building work now in progress at Cambridge:—

During the last academic year notable additions have been made to the University buildings, and Emmanuel College has erected a spacious new court.

The large extension which practically doubles the accommodation of the School of Agriculture is now nearly finished. The architect is Mr. Arnold Mitchell, and the building is designed to accommodate institutions for re-

search in plant breeding and animal nutrition which have been founded under the auspices of the Development Commissioners. The cost of the building has been defrayed by Government grants.

To the east of the School of Agriculture a large laboratory destined to accommodate physiology is now in part reaching its final stage. For the last year that portion of it which houses the Department of Psychology has been in use. The part now approaching completion will not be large enough to house completely the Department of Physiology; for there is, to begin with, no accommodation of any kind for biochemistry, a rapidly growing subject, due provision for which is one of the most pressing needs of the science school. Further, the funds at the disposal of the Building Syndicate have been insufficient to enable them to provide lecture rooms; and although, owing to the generosity of the Drapers' Company, who have defrayed the cost of the laboratory, accommodation both for teaching and for research is on a liberal scale, the teaching will necessarily be hampered by the fact that the lectures will have to be given (as they have been in the past) in the lecture rooms on the old Botanic Garden site. The architect is Sir T. G. Jackson, R.A.

The first portion of the School of Forestry is also now approaching completion. Although inadequate for the full development of the department, it will at any rate be a great improvement on the wretched accommodation at present provided in Free School Lane. The architect is Mr. William C. Marshall.

During the last twelve months the archaeologists have been busy moving the ethnological collections from the old galleries in Little St. Mary's Lane into the new museum at the corner of Tennis Court Road; and it has fortunately been found possible to extend the Museum of Ethnology so as to provide rooms for the Curator and some of the other officials connected with this subject. On the other side of Cambridge, on the Observatory grounds, new buildings have been springing up in connection with Solar Physics; and in the near neighbourhood a house and laboratories for the use of the recently elected Balfour Professor of Biology have been erected.

A notable addition to the collegiate buildings is the new court which Emmanuel has built on the north side of Emmanuel Street. The architect is Mr. Leonard Stokes, who, like Dr. Caius, has kept his court open towards the south, the building forming three sides of a square. Sixty sets of undergraduates' rooms will be provided, and two sets for Fellows. On the west the building is low, and consists of a porter's lodge and cloister, the cloister leading to a subway under Emmanuel Street which connects with the older buildings of the college. A large bicycle shed and a number of bathrooms form part of this wing. The centre of the court will be occupied by a sunken grass oval surrounded by pavement. The building is in white stone and has a dignified, quiet appearance.

Proposed Law for the Registration of Architects in New York State.

The proposed law in New York State for the registration of architects sets forth the way in which an established architect who has been in practice two years may offer satisfactory evidence to the Board of Examiners and be legally registered. Anyone wishing to enter the profession may show a diploma of graduation from a recognised architectural school, together with at least three years' office experience, as satisfactory evidence to the Board of Examiners of his fitness to be registered as an architect. Or he may show satisfactory high school work as preliminary, and

pass an examination in such technical and professional courses as are established by the Board of Examiners; and in addition show at least five years' practical experience in the office of a reputable architect. Any citizen of the United States may apply for registration, or any person over twenty-one years of age who has duly declared his intention of becoming such citizen. Any person having a certificate pursuant to this article may be styled or known as a "Registered Architect." No other person shall assume such title or use the abbreviation "R.A.," or anything to indicate that the person using it is a registered architect. Every person applying for examination or certificate of registration must pay a fee of 25 dollars. In only seven States of the United States are laws in effect licensing architects. The New York law, it is understood, does not prevent anyone from making working drawings or acting as an architect. It only makes it possible for the prospective client to ascertain who are properly prepared to do architectural work. The owner may employ a man who is not registered as an architect.

Victoria League: Banner Competition.

The Central Executive Committee of the Victoria League offers a prize of £25 for the best design for a Banner, which is to be held for a year by that branch of the League in the British Isles which has been awarded the best certificate for all-round work during the previous twelve months. The size of the Banner is to be 7 feet long by 4 feet broad, and all designs must be drawn the full size, and may be sent coloured, or uncoloured, but must be intended to be carried out in colour. The main object of the League, namely, "the promotion of closer union between British subjects living in different parts of the world," must be symbolised by some part of the design, and the words "Victoria League" must also form part of it. The designs should be adapted for being carried out either in needlework (silk or wool) or in appliqué, or to be executed in hand-worked tapestry, or else combining these characters. Judges will be selected by the Central Executive Committee, who in awarding the prize will especially consider (1) Beauty of design; (2) Symbolical representation of the object of the League; (3) Its adaptability to the materials to be used in executing it. Designs must be sent in not later than 1st October 1914, addressed to The Secretary, The Victoria League, Millbank House, 2 Wood Street, Westminster, S.W., from whom full particulars may be obtained.

Philæ in 1913.

A beautiful series of paintings of the Temples at Philæ are on view until Tuesday, 14th November, at the Modern Gallery, 61 New Bond Street. The artist is Mr. Frederick F. Ogilvie, a lifelong

resident in Egypt, and an ardent archaeologist as well as a gifted painter. Mr. Ogilvie has made Egypt his particular field, and this exhibition will be found full of attraction for all who take an interest in that fascinating country. A special feature of the exhibition is the series of drawings showing Philæ in the present year of grace, representing a summer's work after the lowering of the water. Mr. Ogilvie in a note to his catalogue gives the following interesting particulars of the effects of the submersion on these majestic relics:

The summer of this year was a critical time for the Philæ Temples because the water of the reservoir held up by the heightened dam had covered them to the roof, and in May and June they were once more exposed. Injuries effected by the water would then be visible, and there was a possibility that the heavy roofing-blocks left in a saturated condition by the retreating water might break with the added weight; but happily this did not happen, except in one case where part of a cracked roofing-block fell owing to insufficient support from the steel bars put to hold it up.

Ten years ago when the reservoir was filled and emptied for the first time (but at a lower level) it was found that the submerged parts of the Temples were thickly covered with green waterweeds that decayed in the sun and were extremely offensive to the eye and nose as well as injurious to the wall-sculptures and paintings; the same thing was expected to happen this summer, and that the beautiful columns of the Hypostyle Hall would be covered with clinging weeds and slime to their great damage. Happily this has proved not to be the case; owing perhaps to the fact that this vegetation will not flourish in deep water where sunlight cannot penetrate, hardly any weed was found within the temple, and less of the ancient paint was washed off than might have been expected.

What *was* washed off was the dust and dirt that had accumulated on the face of the walls, etc., during more than 2,000 years; and as the water inside the temple was not driven into waves by the winds (as was the surface of the lake outside) the washing had been done gently, and touches and patches of colour hitherto hardly noticed now gleamed on the walls with quite the effect of enamels. It was as pleasing as it was unexpected, but of very short duration. As the water sank the walls streamed with the wet that oozed from them, and this it was that made the colour so brilliant. In two or three days the walls became dry and then the paint faded again. Next summer the same charming effect will be there no doubt, but every year it will decrease as the paint is gradually destroyed by the effect of prolonged soakings.

Floating every day in a little boat among the columns and halls, one saw the painted roofs and capitals lit up with a strong green reflection from below (the Nile becomes very clear and green in summer before the arrival of the muddy flood-water), as well as by most curious patterns of ever-changing and ever-moving light—the reflection of the sun off the ripples. Everywhere in the interior this curious effect of green illumination was to be seen and the dancing patterns of light on the ceilings. The sanctuary was in deep gloom and silence, and the sensation of floating there alone in a little boat was strange and almost terrifying. As noon approached, suddenly a narrow beam of sunlight would enter from above and strike down into the deep water, making a shaft of most brilliant green; the fishes, hitherto seen as ghostly dark shapes, became living forms of gold as they passed through the vivid bar of light to disappear again as suddenly as they had come. For about an hour every day this was to be seen, one of the most fascinating spectacles imaginable; the dim walls with their sculptures of gods and kings just visible, and a faint golden light entering by the half submerged door that led to the outer chambers. It was just at this time and place that several

great fragments of roofing-stone fell with a sudden crash; the waves leapt across the sanctuary, nearly upsetting the boat, and passed on with loud splashings and gurglings into the ante-chambers. The mud stirred by the stones flooded across the sunbeam down in the water through which the terrified fish could be seen dashing to and fro.

Outside the temples the bad effects of the submersion are more plainly seen. High up across the pylons runs the band of brown stain where the water level has been all the winter—an ugly sight, and one that greatly damages the architectural effect, especially as not a tree or shrub is left on the island and the water-stained temples now stand in a morass of mud dotted with black rotting tree-trunks. Everywhere below this stained band on the temples the stone that was a fine golden pink is now changed to a dull greenish grey.

Though the scenes within the temple as here described and pictured have still a passing charm, the beauty of Philæ, externally at any rate, is past—the beauty of golden temples set amidst green trees, more brilliant by contrast with the arid Nubian landscape that surrounded them. The care of the Government engineers will insure the stability of the temples as they now are, each stone that the water destroys will be replaced by a new one, but in the end we shall have an engineer's, not a Ptolemy's temple; and the factories to be erected near the dam for utilization of the power of the cataract will not add anything to the beauty of this once lovely spot.

OBITUARY.

Sir Alfred East, R.A., who died on the 28th September after an illness of several months, had been an Honorary Associate of the Institute since 1903, and rarely missed a meeting when any question of the coloured decoration of buildings was under discussion. On two occasions he read Papers—one on Landscape Painting as a Means of Decoration [JOURNAL, 25th March 1905], and another on Colour as applied to Architecture [JOURNAL, 27th January 1912]. Sir Alfred was born in December 1849, at Kettering, where he taught drawing to his school-fellows while he was still in pinafores. When about ten years of age he earned his first artistic commission of 5s. by drawing a prehistoric animal for a geological lecturer. Leaving school he was placed in a Glasgow counting-house, but, coming into contact with some artists of that city, he determined to be an artist himself. He first studied in the Government School of Art in Glasgow and afterwards at the Ecole des Beaux-Arts, Paris. He exhibited for the first time in 1883, when three of his works were hung at the Royal Academy. He was for many years an exhibitor at the Paris Salon, obtaining a *mention honorable* at the Exposition Universelle of 1889, and a Gold Medal at the Exhibition of 1900. In 1905, having ceased to exhibit at the Old Salon (Société des Artistes Français), he became a member of the rival society—the Société Nationale des Beaux-Arts. He was elected A.R.A. in 1899, and attained full rank as R.A. in July last. A long visit which he paid to Japan, sketching and painting in out-of-the-way parts of the country, considerably influenced his art, and a selection of

these drawings and paintings attracted a great deal of attention when exhibited at the Fine Art Society's rooms some eighteen years ago. In 1906 Sir Alfred succeeded the late Sir Alfred Wyke Bayliss as President of the Royal Society of British Artists. In 1897 he was elected President of the "Sette of Odde Volumes," of which he was one of the oldest members. The honour of knighthood was conferred upon him in 1910.

Thomas Harnett Harrison, of Liverpool, till recently a Fellow of the Institute (elected 1890), died on the 22nd September at the age of seventy. Mr. Harrison was articled in 1862 to Wm. Stubbs, architect and engineer. On the completion of his articles he was appointed assistant engineer in the London and North-Western Railway Engineer's Office, and had the supervision of important architectural and engineering works. He commenced practice in 1868 in partnership with Mr. F. L. Seaton, of Liverpool, and on Mr. Seaton's taking up an appointment in Burma in 1870, he carried on the practice alone, until the establishment of the present firm of Harrison, Son, & Eaton. Mr. Harrison was responsible for the design and carrying out of numerous important business premises and villa residences in Liverpool and neighbourhood, and his work always exhibited considerable structural inventive and æsthetic powers. For some forty years he filled the post of civil engineer to the River Alt Commissioners. He was a prominent member of the Liverpool Architectural Society, and served the office of President in 1892.

John Dodsley Webster, of Sheffield [*Fellow*, elected 1873], died on the 1st October. Mr. Webster served his articles with Mr. S. Worth, of Sheffield, and afterwards had the management of Messrs. Mallinson & Healey's office in Halifax. He commenced independent practice at Sheffield in 1865, and was the architect of St. Bartholomew's Church, Carbrook, Sheffield; St. Cuthbert's, Barnsley Road; St. Timothy's Mission Church, Hackenthorpe; Mission Church and Parish Rooms, Bridge End, Swinton; various restorations of churches in the district; and the Memorial in the Parish Churchyard to the York and Lancaster Regiment, South African Campaign, 1899-1902. Among other important works of his are buildings for the Children's Hospital, Western Bank, and for the Royal Infirmary, Sheffield; the "Queen's" Children's Wards, Rotherham Hospital; Men's Infirmary Wards, Ecclesall Union Workhouse; South Rotherham, Handsworth, and Kiveton Park Joint Infectious Diseases Hospital, Aughton, near Sheffield. He was also the architect of the public elementary schools at Gleadless, Yorks, and Coisley Hill, Woodhouse. Mr. Webster was Diocesan Surveyor for York, and architect to the Ecclesall-Bierlow Union Guardians.

ELTHAM PALACE.

Eltham Palace, where the Office of Works is now carrying out an interesting scheme of preservation, stands on the brow of a green slope looking westwards towards the hills of Greenwich and South London. It can be reached from London most quickly by taking train to Eltham station, which is about half a mile away on the other side of the hill.

In a monograph of the building by H. Dunnage and C. Laver, published in 1828, it is stated that the King's House, or Palace, was most probably built in the reign of Henry III., as in the year 1270 he and his Queen, attended by the chief nobility of the kingdom, passed their Christmas here in feasting and splendour. In the latter end of the next reign, Anthony Beke, Bishop of Durham, was in possession, and either rebuilt or greatly enlarged it for his own residence. After his death it reverted to the Crown. Eltham was the frequent place of residence of Edward II., and John of Eltham, his second son, was born there in 1315. In 1329 Edward III. held a Parliament here, and in 1364 he and his Queen entertained at the Palace with great magnificence John II., King of France. Richard II. resided here frequently during the years 1384-86. Henry VI. made it his principal place of residence. Edward IV. spent large sums on the repairs of the Palace, and his fourth daughter, Bridget, was born here in 1480. Henry VII. is said to have built a fair front facing the moat, and generally resided here. Henry VIII. made Greenwich his chief place of residence, but he occasionally visited Eltham, and spent Christmas there in 1526. In 1559 Queen Elizabeth, on the first of her royal progresses, stayed for a few days at the Palace. Sir Christopher Hatton, Lord Chancellor from 1587 to 1592, was keeper of the house and demesnes till his death, when the office was bestowed by the Queen on Lord Cobham. James I. visited the Palace in 1612, and the Earl of Essex, the Parliamentary general, occupied it for some time and died there. A report made by order of the State after the death of Charles I. states that the "capital mansion, called Eltham House," built of brick, stone, and timber, "consisted of one fair chapel, a great hall, thirty-six rooms, and offices below stairs, with two cellars; above stairs, seventeen lodging-rooms on the King's side, twelve rooms on the Queen's side, and nine on the Prince's, with various other necessary rooms and closets. Also thirty-five bays of building, containing seventy-eight rooms used as offices round the court-yard, which contained one acre of ground." The report adds that none of the rooms were then furnished, except the Great Hall and the Chapel, and that the whole was much out of repair.

Every trace above ground of the Chapel has now vanished, though excavation would probably show its foundations; it formed, no doubt, a convenient

quarry for builders in a district where there is no building stone close at hand. It stood between the gateway and the Great Hall, and was twisted out of the general plan of the building in order to give it the proper orientation. The Hall was spared because its great size made it useful for a barn, but the glass and stonework perished and the windows were later blocked up with brick. Besides this noble building, of which the fifteenth-century timber roof is one of the most beautiful in England, the most important remains within the area enclosed by the moat are the retaining wall of the terrace and the lower courses of some of the dwelling rooms next to the moat, which apparently escaped complete destruction owing to their being sunk beneath the level of the soil above. Under the floor of these rooms there still exists in very fair repair a covered way to a private bridge built for himself by Henry VIII., just above the level of the water, out to the park beyond. On the opposite side of the Palace the main bridge of four pointed arches leading from the outer court to the inner gatehouse still spans the moat. On three sides the dry bed of the moat now forms part of the garden of the private residence which stands next to the Hall; and an engraving in Lysons's "Environ of London," published in 1796, shows in front of the gateway only a narrow pool of water stopping short of the bridge. Now the water extends for the full length of the moat on this side, though not for its exceptional original breadth of 100 ft.; and the moat and old bridge, with a glimpse of the Great Hall beyond, form a singularly delightful picture.

The *Times* recently published the following interesting account of the very careful work of preservation now being carried out at the Palace by the Office of Works:—

The work already undertaken includes the removal of the rough brickwork, with which the empty windows had been filled for the protection of the interior against the weather, and the restoration of the original design. The Reigate stone used by the 15th century builders has in places weathered very badly; and this is being replaced by more durable stone where it is decayed. The work is being carried out with scrupulous taste and care. Owing to the ample design of the windows, the solid structure of the walls was from the first hardly sufficient to take the weight of the roof securely. In the course of centuries of neglect the roof has opened and spread until the centre of the beams no longer follow a true line, and the windows have been forced out of position. The distortion is hardly noticeable on a general view from below, but introduces grave difficulties in restoring the design. In the great southern bay at the west end of the Hall, when one of the vanished mullions of the oriel window came to be replaced, it was found that it would no longer meet the shaft of the surviving tracery above. In another part of the same oriel window the restored tracery would not fit the widened curve of the arch. No attempt has been made either to introduce sham 15th century work of 20th century construction or to distort the new work necessary for the preservation of the structure into an imitation of the gradual warping of time. The new work inserted in the walls and windows to prevent further decay is frankly dated "1912," though—unlike most of the previous repairs on the spot—it is carefully subordinated to what

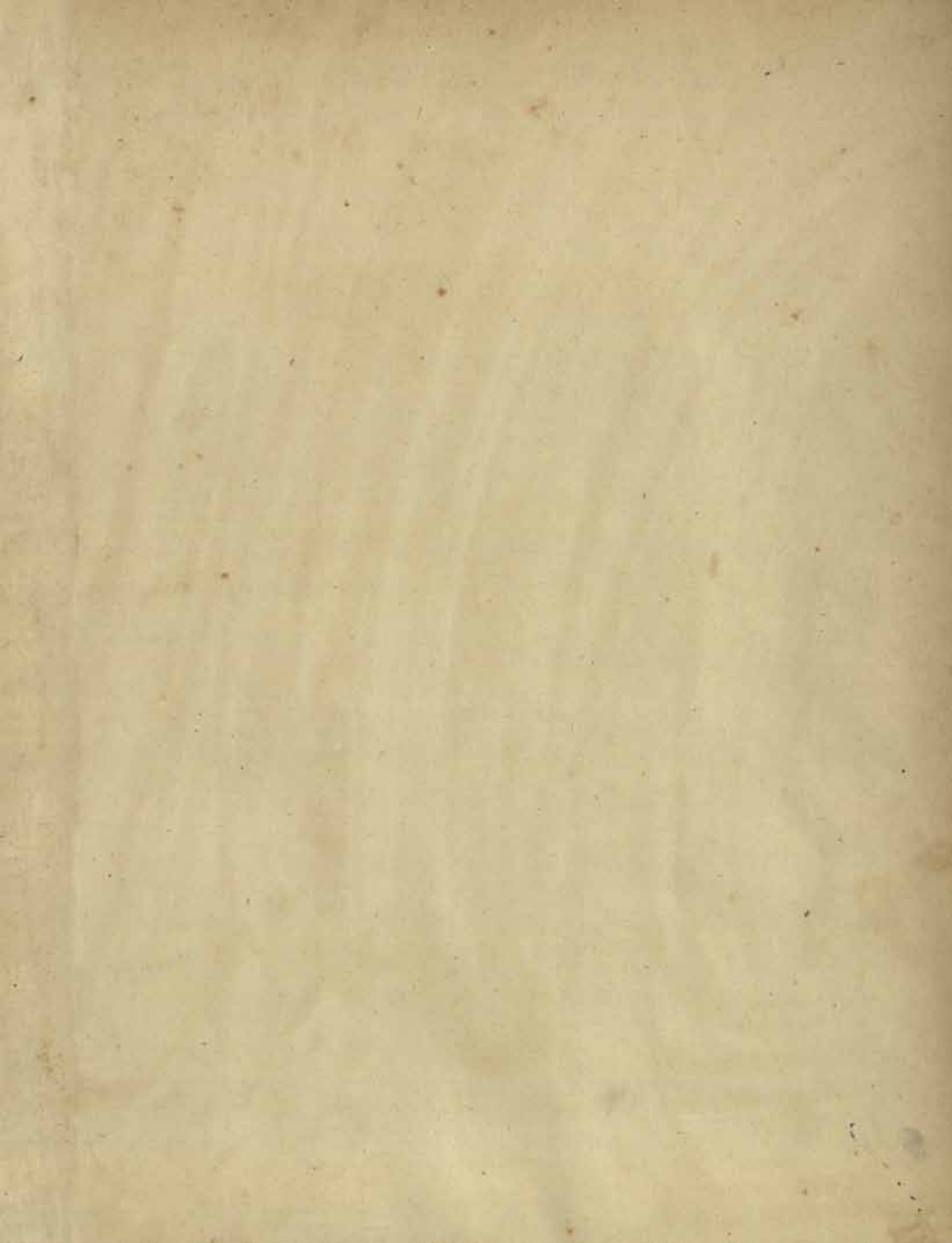
is old. Where the tracery would not meet the replaced mullion, it has been supported as it stands, and left a few inches out of the true line, but safe for the future. Where the spread arch is too wide for the replaced tracery, the design has not been falsified by widening it, but a narrow fillet of stonework has been interposed to fill the gap. Owing to the original slightness of the stonework, and subsequent neglect, the work of repair has been one of extreme delicacy. The defaced vaulting of one of the bays was successfully held in place while its supports were being strengthened, when a slip of a fraction of an inch would have brought it down. A large proportion of the stones in the windows, and of those in the bridge spanning the moat, are now held individually in place by copper ties. In every case where it has been necessary to insert modern work, the architect in charge of historic buildings under the Office of Works and the Inspector of Ancient Monuments have aimed at keeping it subordinate to the original design, and in harmony with it, while not attempting to conceal its modern date.

The same scrupulous judgment is shown in the work progressing on other parts of the old Palace. Where the brick bays overhanging the dry moat on the west were hacked away within the swing of a man working a pickaxe, they have been underpinned here and there by inserting old bricks of the same mellow redness. The colour of the brickwork about the Palace is one of its great charms; and a method of pointing has been devised which spares all its delicacy, while repairing it as effectually as the ugliest cement or plaster. Roughcast of a carefully-chosen consistency is dabbed in, and then worked over with a wet brush, until the coarser grit stands out with a surface and colour which blend harmoniously with the brick. The effect is extremely good, and the method might well be copied by all who cherish old but decayed brick walls. A curious feature of the old garden, outside the moat, is a row of niches in the wall, in which brasiers were probably placed to protect the fruit-blossom on frosty spring nights. They were blocked with plaster, which has now been removed. Much care and labour have been spent on the bridge, which threatened to collapse under stress of the heavy motor traffic of the last few years. By bonding the stones with copper, and grouting the interior with liquid cement, the whole bridge will practically become a monolith, and will offer secure resistance to any form of traffic. An incidental result of this work was the discovery of the pit of the old drawbridge. Another important piece of consolidating work is being carried out where the retaining wall of the terrace had slipped forward on a layer of clay and threatened to fall into the moat. The clay bed has been excavated, and replaced by one of cement, which should prevent any further travels.

The work already done is of the utmost value in safeguarding the remains of this Palace against further decay, and revealing their beauties more fully. But the Hall, which is the peculiar glory of the spot, is still in an extremely unsafe state, and urgently needs thorough repair. The heavy roof continues to thrust out the walls, and some of its own beams are very much decayed. Their rottenness makes them a wholly inadequate support for the iron ties which were inserted as a measure of safety some years ago; and it is impossible to trust to them any longer. The thorough repair of the roof will involve a considerable further outlay; but the nation ought not to grudge the necessary expenditure for safeguarding a building so full of beauty and so rich in historic associations.

Plans, elevations, sections, details, and views, together with an essay, historical and descriptive, appear in Messrs. Dunnage and Laver's monograph above mentioned, a copy of which is in the Institute Library.

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